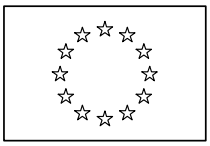

EUROPEAN COMMISSION
Competition DG

Pharmaceutical Sector Inquiry

Preliminary Report

(DG Competition Staff Working Paper)

28 November 2008

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EXECUTIVE SUMMARY

A. Introduction

The pharmaceutical sector is vital to the health of Europe's citizens. Europe's patients need access to safe, innovative and affordable medicines. The market for prescription and non-prescription medicines is worth over € 138 billion ex factory and € 214 billion at retail prices. This translates into a retail expenditure of approximately € 430 for each EU citizen in 2007.

In January 2008 the European Commission launched a sector inquiry into EU pharmaceuticals markets under the EC competition rules (Articles 81 and 82 of the EC Treaty) because information relating to innovative and generic medicines suggested that competition may be restricted or distorted. This was indicated by a decline in innovation measured by the number of novel medicines reaching the market, and instances of delayed market entry of generic medicines, as compared to what might be expected. This Preliminary Report confirms the decline of new chemical entities reaching the market and the delays of generic market entry and highlights some of the possible causes.

The Preliminary Report does not seek to identify wrongdoing by individual companies or to reach any conclusion as to whether certain practices described in the report infringe EC competition law. It provides the Commission with a factual basis for deciding whether further action is needed.

The inquiry relates to the period 2000 – 2007 and involves investigation of a sample of 219 medicines. The main findings set out in this Preliminary Report relate to:

<u>Competition between Originator Companies and Generic Companies</u>

The preliminary report emphasises that patents are key in the pharmaceutical sector, as they allow companies to recoup their often very considerable investments and to be rewarded for their innovative efforts.

The report also finds that originator companies have designed and implemented strategies (a "tool-box" of instruments) aimed at ensuring continued revenue streams for their medicines. Although there may be other reasons for delays to generic entry, the successful implementation of these strategies may have the effect of delaying or blocking such entry. The strategies observed include filing for up to 1,300 patents EU-wide in relation to a single medicine (so-called "patent clusters"), engaging in disputes with generic companies leading to nearly 700 cases of reported patent litigation, concluding settlement agreements with generic companies which may delay generic entry and intervening in national procedures for the approval of generic medicines. The additional costs caused by delays to generic entry can be very significant for the public health budgets and ultimately the consumer.

The sector inquiry confirms that generic entry in many instances occurs later than could be expected. For a sample of medicines under investigation which had lost exclusivity in 2000 to 2007 the average time to enter after loss of exclusivity was about seven months on a weighted average basis, whereas also for the most valuable medicines it

took about four months. On average, price levels for medicines in the sample that faced loss of exclusivity in the period 2000 – 2007 decreased by almost 20% one year after the first generic entry. However, the decreases in price levels were as high as 80-90% in rare cases for some medicines in some Member States. Based on the sample of medicines under investigation that faced loss of exclusivity in the period 2000 – 2007, representing an aggregate post-expiry expenditure of about € 50 billion over the period (in 17 Member States), the preliminary report estimates that this expenditure would have been about € 14 billion higher without generic entry. However, the savings from generic entry could have been about € 3 billion more, further reducing expenditure for these medicines by more than 5%, if generic entry had taken place without delay. The findings of the inquiry suggest that the practices under investigation contribute to this.

Competition between Originator Companies

The preliminary findings of the inquiry also suggest that originator companies develop and practise defensive patenting strategies primarily in order to block the development of new competing products. This can lead to obstacles to innovation, in form of higher costs for competing pharmaceutical companies (e.g. for royalties), or in delays.

The Regulatory Framework

In the context of the inquiry stakeholders made a significant number of comments on the regulatory framework, highlighting perceived difficulties and shortcomings. Generic companies and originator companies are in agreement over the need for a single Community patent and the creation of a unified and specialised patent judiciary in Europe. The preliminary findings of the inquiry support these views. Different stakeholders also highlight what they perceive as bottlenecks in the procedures for approval and marketing of medicines (including pricing and reimbursement status), which may contribute to delays in bringing products to market.

B. Market Features of the Pharmaceutical Sector

1. Main Market Features

1.1. Market Structure

The pharmaceutical sector is R&D driven and highly regulated. On the supply side, there are two types of companies. So-called "originator" companies are active in research, development, manufacturing, marketing and supply of innovative medicines. These are usually subject to patent protection, needed to provide a reward for innovation and incentives for future research. When patent protection expires, the originator companies lose their exclusive rights to manufacture and market these medicines and generic manufacturers can enter the market with medicines that are equivalent to the original medicines, but typically at significantly lower prices. This helps contain public health budgets, contributes to an increase in consumer welfare and creates incentives for further innovation.

Originator companies and R&D: During the period 2000 – 2007 originator companies spent on average 17% of their turnover from prescription medicines on R&D worldwide (approximately 1.5% of turnover was spent on basic research – research to identify potential new medicines, the rest mostly on (pre-)clinical trials and tests). Expenditure

on marketing and promotional activities accounted for 23% of their turnover, thus about one third more than they spent on R&D as a whole. The inquiry confirms that a few "blockbuster" medicines (i.e. where annual global turnover for that medicine exceeds US$ 1 billion) account for a substantial part of the sales and profits of large originator companies. A number of blockbuster medicines have lost patent protection in recent years and more will do so in the coming years. Combined with other factors, this has given originator companies incentives to extend the period during which they enjoy blockbuster revenues.

Generic companies: Generic companies are in general smaller in size than originator companies and often more regional in nature. Large generic companies are active with a significant range of products. They generate a large part of their turnover from medicines equivalent to blockbuster products whose exclusivity has expired. Their activity in R&D is limited.

Demand for Pharmaceuticals: On the demand side, the pharmaceutical sector is unusual in that for prescription medicines, the ultimate consumer (the patient) is not the decision maker (generally the prescribing doctor and in certain Member States the pharmacist). Nor does the ultimate consumer usually directly bear the costs, as these are generally met by a national health scheme. Because of this unique structure, there is usually limited price sensitivity on the part of decision makers and patients.

1.2. Product Life Cycle

There are three distinct phases to the life cycle of a new medicine: (1) R&D phase up to market launch; (2) the period between launch and loss of exclusivity (e.g. patent expiry); and (3) the period following the loss of exclusivity, when generic companies can enter the market.

During the first phase, companies identify potential new medicines and take them through intensive pre-clinical and clinical trials. The originator companies surveyed rely to a large degree (i.e. for more than one third of all new medicines in the marketing approval phase) on innovations acquired from third parties.

During the second phase, originator companies market the medicines they have developed, with a view to recouping upfront investments and making a profit. Effective patent protection is vital to sustain this business model, which also ensures there are incentives for further innovation.

Following loss of exclusivity, generic medicines can enter the market. The share of generic medicines varies significantly between Member States. In value terms the generic share is the highest in Poland (56%), Portugal and Hungary (both 32%) and lowest in Ireland (13%), France (15%) and Finland (16%).

1.3. Impact of Generic Entry

Of the medicines in the sample that were the subject of further in depth investigation and which had lost exclusivity in the period 2000 – 2007, about half faced generic entry within the first year after loss of exclusivity (EU average). Measured in value terms, these medicines represent about 74% of sales (sales value in the year of expiry).

The average time gap between the date on which the medicines lost exclusivity and the date of first generic entry was about seven months on a weighted average basis for the sample as a whole, whereas also for the most valuable medicines about four months, with considerable variations across Member States and across medicines.

Generic companies began selling generic medicines on the market at a price that was, on average, 25% lower than the price of the originator medicines prior to the loss of exclusivity. Two years after entry, generic medicine prices were on average 40% below the former originator price. The market share (in volume terms) that the generic companies attained was about 30% at the end of the first year and 45% after two years.

In markets where generic medicines become available, average savings to the health system (as measured by the development of a weighted price index of originator and generic products) are almost 20% one year after the first generic entry, and about 25% after two years (EU average). The inquiry points to considerable differences, however, in the effect of entry of generics in the various EU Member States and across medicines.

Based on the sample of medicines under investigation that faced loss of exclusivity in the period 2000 – 2007, representing an aggregate post-expiry expenditure of about € 50 billion over the period (in 17 Member States), the preliminary report estimates that this expenditure would have been about € 14 billion higher without generic entry. However, the savings from generic entry could have been about € 3 billion more, further reducing expenditure for these medicines by more than 5%, if generic entry had taken place without delay.

2. The Regulatory Framework

Three sets of rules are particularly relevant for the pharmaceutical sector, namely patent rules, marketing authorisation rules and rules on pricing/reimbursement of medicines.

2.1. Patents

In Europe, patent protection can last up to 20 years from the date of a patent application. For the pharmaceutical sector, where the time between filing a patent application and market launch can be significantly longer than in other sectors, supplementary protection certificates (SPCs) can be issued. These extend the effective protection of products already on the market by a maximum of five years.

Despite significant efforts, neither a Community patent nor a Community jurisdiction for patent matters exist. The European Patent Office handles centralised patent applications (and opposition and appeal procedures relating to granted patents). However, once granted, the European patent turns into a bundle of national patent rights, which, in court, must be challenged at national level. This can lead to diverging national decisions and is costly and time-consuming for all stakeholders concerned.

2.2. Marketing Authorisations

In order to maintain public health standards, marketing authorisation procedures verify that medicines are safe, effective and of good quality. Detailed results of (pre-) clinical tests and trials must be submitted for a new medicine. Generic medicines also require marketing authorisations, but applications need not resubmit detailed trial results, if it is shown that the generic product is equivalent to a medicine previously authorised.

However abridged applications of this kind are only permitted once the originator company's data relating to the (pre-) clinical tests and trials is no longer protected.

Marketing authorisation procedures are regulated by EU law. There is a centralised application procedure leading to authorisation for the entire EU or national procedures which result in national authorisations that can benefit from mutual recognition in other Member States.

2.3. Pricing and Reimbursement

In almost all Member States the pricing and reimbursement status of a prescription medicine must be determined before launch if funded under the social security system. The underlying objective is to maintain control over national health budgets.

A number of Member States apply policies supporting the sale of generic medicines by combining demand and supply side pricing practices, such as obliging pharmacists to always dispense the cheapest product. In certain Member States health insurers have recently become active in controlling prices for medicines, e.g. through tender procedures.

C. Main Findings

1. Products and Patents

The pharmaceutical sector is one of the main users of the existing patent system. The number of pharmaceutical-related patent applications before the European Patent Office (EPO) nearly doubled between 2000 and 2007. Contrary to what might be assumed, blockbuster medicines' patent portfolios show a steady rise in patent applications throughout the life cycle of a product. Occasionally they show an even steeper increase at the end of the protection period conferred by the first patent.

2. Competition between Originator and Generic Companies – The Issues

Originator companies use a variety of strategies to extend the commercial life of their medicines for as long as possible.

2.1. Patent Filing and Patent Enforcement Strategies

The preliminary findings of the inquiry are that in recent years originator companies have changed their patent strategies. In particular, originator companies confirm that they aim to develop strategies to extend the breadth and duration of their patent protection.

One commonly applied strategy is filing numerous patents for the same medicine (forming so called "patent clusters" or "patent thickets"). Documents gathered in the course of the inquiry confirm that an important objective of this strategy is to delay or block the market entry of generic medicines. In this respect the inquiry finds that individual blockbuster medicines are protected by up to 1,300 patents and/or pending patent applications EU-wide and that, as mentioned above, certain patent filings occur very late in the life cycle of a medicine.

Patent clusters can lead to uncertainty for generic competitors as to whether and when they can start to develop a generic medicine without infringing one of the many (new) patents, even though patent holders admit internally that some of these patents might not be strong.

A second instrument used by originator companies appears to be filing "divisional patent" applications. Divisional patent applications are instruments allowing the applicant e.g. to split an initial (parent) application. Examination of divisional applications continues even if the parent application is withdrawn or revoked, which can add to the legal uncertainty for generic companies.

Enforcing patent rights in court is generally legitimate: it is a means of ensuring that patents are respected. The inquiry's preliminary finding is however that litigation can be an efficient means of creating obstacles in particular for smaller generic companies. In certain instances originator companies may consider litigation not so much on its merits, but rather as a signal to deter generic entrants.

2.2. Patent-Related Exchanges and Litigation

Between 2000 and 2007, originator and generic companies engaged, out of court, in at least 1,300 patent-related contacts and disputes concerning the launch of generic products. The vast majority of disputes was initiated by the originator companies, which most often invoked their primary patents, e.g. in warning letters.

The number of patent litigation cases between originator and generic companies increased by a factor of four between 2000 and 2007. In total, close to 700 cases of patent litigation between originator companies and generic companies were reported in relation to the medicines investigated. Out of these, 149 cases were reported as litigation in which a final judgment was reached by the court. The duration of patent litigation varied considerably between Member States with an average duration of 2.8 years.

The majority of court cases were initiated by originator companies. However, generic companies won the majority of cases in which a final judgment was given (62%). Unlike during the dispute phase, originator companies primarily invoked secondary patents during litigation.

Litigation was often initiated in many different Member States across the EU with respect to the same medicine. In 11% of the final judgments reported, two or more different courts in different EU Member States gave conflicting final judgments on the same issue of patent validity or infringement.

Originator companies asked for interim injunctions in 225 cases, and were granted such injunctions in 112 cases. The average duration of the interim injunctions granted was 18 months.

The total cost of patent litigation in the EU relating to the 68 medicines on which litigation was reported for the period 2000 – 2007, is estimated to exceed € 420 million.

2.3. Opposition and Appeals

The sector inquiry confirms that the opposition rate (i.e. the number of oppositions filed per 100 granted patents) before the EPO is consistently higher in the closest available

proxy for the pharmaceutical sector than it is in organic chemistry and in all sectors (overall EPO average). Based on the sample investigated, generic companies almost exclusively opposed secondary patents. They prevailed in approximately 75% of final decisions rendered by the EPO (including the Boards of Appeal) during 2000 to 2007, either by achieving the revocation of the patent or by having its scope restricted.

Even though generic companies are very successful in opposing originator company secondary patents, approximately 80% of final decisions took more than two years to obtain. The duration of opposition procedures (including appeal procedures) considerably limits the generic companies' ability to clarify the patent situation of potential generic products in a timely manner.

2.4. Settlements and Other Agreements

The inquiry's preliminary findings confirm that originator companies and generic companies conclude settlement agreements in the EU in order to resolve claims in patent disputes, oppositions or litigation. Between 2000 and June 2008, more than 200 settlement agreements were concluded covering some 49 medicines, of which 63% were best-selling medicines that lost exclusivity between 2000 and 2007.

When assessing the possibilities for settling patent litigation, originator companies are most concerned with the strength of their position, i.e. the probability of winning or losing, as well as with the importance of the product for their overall business (turnover, market shares, presence of other market players, etc.). Generic companies are more concerned with saving costs arising from lengthy and complex litigation proceedings, as well as with removing the uncertainty inherent in patent litigation.

In more than half of the settlements in question the originator company did not impose any restrictions on generic entry. However in 48% of the settlement agreements relating to the EU, the generic company's ability to market its medicine is restricted. A significant proportion of settlements contained – in addition to the restriction - a value transfer from the originator company to the generic company, either in the form of a direct payment or in the form of a licence, distribution agreement or a "side-deal". Direct payments occurred in more than 20 settlement agreements and the total amount of these direct payments from originator companies to generic companies exceeded € 200 million.

In the USA, the Federal Trade Commission has scrutinised patent settlements that contained a direct payment made by the originator company to the generic company combined with a restriction on the generic company to enter the market with its own medicine.

Between 2000 and 2007, originator companies and generic companies entered into a large number of agreements concerning the sale/distribution of generic medicines. One third of these agreements concerned originator medicines which still benefited from exclusivity.

2.5. Other Practices Affecting Generic Entry

The inquiry's preliminary findings confirm that interventions by originator companies before national authorities other than patent offices occurred in a significant number of

cases. Originator companies intervened when generic companies applied for marketing authorisation and pricing/reimbursement status for their medicines. Originator companies claimed in their interventions that generic products were less safe, less effective and/or of inferior quality. They also argued that marketing authorisations and/or obtaining pricing or reimbursement status could violate their patent rights, even though marketing authorisation bodies may not take this argument into account. The interventions by originator companies often focused on a few high-turnover products.

When the patent-related matters resulted in litigation, the claims of the originator companies were upheld in only 2% of the cases, suggesting that the arguments submitted against the generic medicine could not be substantiated. Originator companies had also a low success record in cases concerning data exclusivity.

Intervention and litigation by originator companies interfering in administrative proceedings for generic medicines can lead to delays to generic market entry. In relation to a sample that was investigated in depth, it appears that marketing authorisations were granted on average four months later in cases in which an intervention took place. Originator companies believe they have generated significant additional revenues as a result of such practices.

The inquiry's preliminary finding is that originator companies spent on average 23% of their turnover on marketing and promotion activities for their products. As part of their commercial strategies, originator companies do not simply promote their own medicines to doctors and other healthcare professionals. There are also indications of practices seeking to put into question the quality of generic medicines.

Finally, there are indications that originator companies attempt to exercise influence over the distribution channel (wholesalers) and supply sources for the active pharmaceutical ingredients needed to produce the medicines in question.

Direct-to-pharmacy (DTP) distribution is a new trend in the distribution of medicines. In DTP distribution, the pharmaceutical company sells the medicines directly to the pharmacists. According to some stakeholders, this model could eventually lead to less competition at the wholesale level and possibly render it more difficult for smaller originator companies and generic companies to enter the market.

2.6. Life Cycle Strategies for Follow-on Products

The preliminary findings of the inquiry suggest that for 40% of the medicines in the sample selected for in depth investigation, which had lost exclusivity between 2000 and 2007, originator companies launched so called second generation/follow-on medicines. On average the launch took place one year and five months before loss of exclusivity of the first generation product. In some cases the first medicine was withdrawn from the market some months after the launch of the second generation medicine. Nearly 60% of the patent related litigation cases between originator and generic companies examined in the context of the inquiry concern the medicines that were subject to switch from first to second generation products.

In order to successfully launch a second generation medicine, originator companies undertake intensive marketing efforts with the aim of switching a substantial number of the patients to the new medicine prior to market entry of a generic version of the first

generation product. If they succeed, the probability that generic companies will be able to gain a significant share of the market decreases significantly. If on the other hand generic companies enter the market before the patients are switched, originator companies have difficulties in convincing doctors to prescribe their second generation product and/or obtain a high price for the second generation product.

The launch of second generation products is often carefully prepared from a patent point of view, in order to ensure that the first generation medicine is adequately protected until the switch takes place. It also requires new patent filings for the second generation product. Whilst it is generally accepted that innovation is often achieved in incremental steps, patents relating to second generation products are sometimes criticised as weak by other stakeholders who argue that they show only a marginal (if any) improvement or additional benefit to the patients.

2.7. Cumulative Use of Practices against Generic Companies

In many instances originator companies use two or more instruments from the "tool-box" in parallel and/or successively in order to prolong the life cycle of their medicines. These instruments notably include secondary patenting, patent related contacts and disputes, litigation, settlements, and interventions before various authorities. Certain originator companies even resorted to the cumulative use of all these instruments for certain medicines.

The extent to which these instruments are used depends on the commercial importance of the medicines. The sector inquiry shows that more life cycle instruments are used for best-selling medicines.

The combined use of life cycle instruments may increase the likelihood of delays to generic entry; delays due to the use of several instruments may sometimes be cumulative. More generally, it may significantly increase legal uncertainty to the detriment of generic entry and can cost public health budgets and ultimately consumers significant amounts of money.

3. Competition between Originator Companies – The Issues

3.1. Patent Strategies

The preliminary findings of the inquiry show that originator companies engaged in so-called "defensive patent strategies". Patents falling into this category were primarily used in order to block the development of a new competing medicine. The sector inquiry also shows that in such cases the originator companies do not intend to pursue these patents in order to bring a new/improved medicine to the market.

Defensive patenting can serve two purposes. First, it creates an enforceable right, which may prevent competitors from developing the subject matter of that patent. Secondly, it creates prior art as soon as the patent application is published. Thus the development of the published invention may cease to be of commercial interest to other companies as they would not be able to get patent protection for their development. Some companies also maintained that they engage in patenting activities to obtain licensing opportunities.

Originator companies also mentioned divisional patent applications as interfering with their R&D projects, which, once granted, they challenged in a number of cases by way of opposition procedures.

3.2. Patent-Related Exchanges and Litigation

In total, the inquiry reveals at least 1,100 instances across EU Member States where the patents held by an originator company relating to a medicine in the sample investigated might overlap with the R&D programme and/or patents held by another originator company for their medicine. This overlap creates significant potential for originator companies to find their research activities blocked, with detrimental effects on the innovation process.

In many cases originator companies tried to settle potential disputes, for instance through licensing. However, in approximately 20% of the cases where a licence was requested the patent holder refused to grant it.

The inquiry finds that originator companies engaged in litigation against other originator companies. The companies reported, in relation to the sample under investigation, for the period 2000 – 2007, a total of 66 cases of patent-related litigation, which concerned 18 different medicines. Litigation was initiated by the patent holder and the originator company allegedly violating the patent in equal proportions. In 64% of the cases, litigation was concluded by means of settlement agreements. The number of cases where a final judgment was reported was relatively low (13 of the 66 cases). The patent holders lost the majority (77%) of cases where final judgments were given.

3.3. Oppositions and Appeals

Between 2000 and 2007, relating to the sample of medicines under investigation, originator companies mainly opposed each other's secondary patents.

The opposing originator companies were very successful when challenging the patents of other originator companies. During that period, they prevailed in approximately 89% of final decisions rendered by the EPO (including the Boards of Appeal).

3.4. Settlements and Other Agreements

The inquiry confirmed that originator companies concluded settlement agreements with other originator companies in the EU in order to resolve claims in patent disputes, oppositions or litigation. In the period 2000 – 2007, some 27 settlement agreements relating to the sample under investigation were reported. Approximately 67% of these settlement agreements concerned a licence agreement (including cross licensing).

Besides settlement agreements, the preliminary findings of the inquiry also reveal that originator companies concluded many other agreements with each other. In total, some 1,450 originator-originator agreements were reported during the sector inquiry. For certain medicines, a wide range of agreements were reported, of which the majority concerned the commercialisation phase rather than the R&D phase.

D. Comments on the Regulatory Framework

Stakeholders made a significant number of comments on the regulatory framework, which they consider decisive for the pharmaceutical sector. The report summarises these comments without, however, drawing any firm conclusions at this stage.

1. Patents

In their submissions, both generic and originator companies support the creation of a single Community patent to amend the current costly and burdensome system consisting of a bundle of national patents. They also favour the creation of a unified and specialised patent judiciary in Europe replacing the existing fragmented and costly patent litigation system run along national lines.

A significant number of generic companies - and to some extent also originator companies - call upon the EPO to ensure that patents granted are of high quality and to effectively counter patent strategies that may result in unnecessary delays.

The inquiry suggests that significant cost and efficiency improvements could be achieved by creating a Community patent and a unified patent judiciary (e.g. by avoiding the high number of essentially parallel court cases, divergent outcomes of cases and the costs associated with multiple national patents and national patent litigation).

2. Marketing Authorisation

Companies, industry associations and agencies reported bottlenecks in the marketing authorisation procedures, which could lead to obstacles/delays and administrative burdens. The bottlenecks for all companies were allegedly created through the lack of adequate resources in certain agencies. Obstacles for generic companies were said to be created mainly by discrepancies in assessment criteria and by the fact that some regulatory bodies consider whether the generic product may infringe the originator company's patents (patent linkage) as well as by the disclosure of information to competitors. Patent-linkage is considered unlawful under Regulation (EC) No 726/2004 and Directive (EC) No 2001/83.

In particular, certain originator companies would support further international harmonisation of marketing authorisation procedures. Currently there are significant differences between the US and EU markets, e.g. regarding paediatric trials, leading to additional costs and delays. Some efforts are already undertaken in this respect.

3. Pricing and Reimbursement

Originator companies complained in particular about delays and uncertainties created by national pricing and reimbursement procedures. They argued that this would shorten the period during which they enjoy exclusivity and consequently reduce their expected reward. Originator companies attributed the delays and uncertainties amongst others to the fragmentation of the national decision making-process, the increasing use of health technology assessments and the wide-spread use of cross-border reference pricing systems.

Delays are also the main complaint of generic companies. They argue that these delays result not only from the decision making procedures, but often also from the additional requirements for obtaining pricing and reimbursement status for generic medicines, e.g. information on the patent status or concerning complete equivalence between the originator and generic product. These additional requirements seem to give opportunities for originator companies to intervene and hence prolong the de-facto exclusivity period of their product.

Finally, concerns were expressed by originator companies about specific practices to control expenditure, in particular therapeutic reference pricing (and the inclusion of patented products). Generic companies on the other hand would support the wider use of this practice, as it can facilitate market entry for generic products.

E. Launch of Public Consultation

DG Comp is soliciting the views and comments of interested stakeholders about the preliminary findings of the sector inquiry presented in the Preliminary Report. All stakeholders are invited to submit their comments on this report not later than 31 January 2009. All comments should be sent to the following e-mail address: COMP-SECTOR-PHARMA@ec.europa.eu.

The final report of the sector inquiry is expected in the spring of 2009.

GLOSSARY

"Active" in an INN* means that an originator company* sells a product* belonging to that INN*, or has sold the product* in any given period since January 2000.

"API" stands for "active pharmaceutical ingredient".

"ATC" stands for Anatomical Therapeutic Chemical classification, i.e. an international standard for classifying medicines.

"BEUC" stands for the European Consumers' Association (Bureau Européen des Unions de Consommateurs).

"Biopharmaceutical" is defined as a pharmaceutical which is produced by using biotechnology.

"Biosimilar" is defined as a product* which has been approved by the relevant marketing authorisation agency as being comparable to a particular biopharmaceutical*.

"Blockbuster medicine" is defined as being one which achieves annual revenues of over US$ 1 billion at global level.

"Community Pharmacies" refers to publicly accessible pharmacies as opposed to hospital pharmacies.

"Country codes" refer to the abbreviations found on the following website: http://www.iso.org/iso/country_codes/iso_3166_code_lists/english_country_names_and_code_elements.htm.

"CPME" stands for Standing Committee of European Doctors.

"Data exclusivity" refers to the period during which the data of the original marketing authorisation holder relating to (pre-) clinical testing is protected. Accordingly, in relation to marketing authorisation applications submitted after 30 October 2005 for the applications filed in the framework of national procedures or 20 November 2005 for applications filed in the framework of the centralised procedure, 'data exclusivity' refers to the eight-year protection period during which generic applicant may not refer to the information of the original marketing authorisation holder and 'marketing exclusivity' refers to the ten-year period after which generic products can be placed on the market. However, in relation to marketing authorisation applications submitted before the above mentioned dates, the wording 'data exclusivity' refers to the six or ten-year protection period granted to the original MA holder before generic applicants can file their applications for marketing authorisation.

"DCP" stands for Decentralised Procedure.

"DDD" is the assumed average maintenance dose per day for a drug used for its main indication in adults.

"Dispute" is understood as every exchange of views between two companies where, in particular, the actual or potential infringement, non-infringement or invalidity of one or several patents concerning a specific INN* or R&D pole* has been raised, which, however, did not (yet) end in litigation*.

"DTP" stands for the distribution form: direct to pharmacy.

"EGA" stands for the European Generics Association.

"EFPIA" stands for European Federation of Pharmaceutical Industries and Associations.

"EMEA" stands for European Medicines Agency.

"EPC" stands for the European Patent Convention.

"EPO" stands for the European Patent Office.

"EU27/EU27 Member States" refers to the countries that are members of the European Union:

AT = Austria	DE = Germany	NL = Netherlands
BE = Belgium	EL = Greece	PL = Poland
BG = Bulgaria	HU = Hungary	PT = Portugal
CZ = Czech Republic	IE = Ireland	RO = Romania
CY = Cyprus	IT = Italy	SK = Slovakia
DK = Denmark	LV = Latvia	SI = Slovenia
EE = Estonia	LT = Lithuania	ES = Spain
FI = Finland	LU = Luxembourg	SE = Sweden
FR = France	MT = Malta	UK = United Kingdom

For years prior to accession, EU27* stands for those Member States which were already Members of the EU.

"Generic" is defined as a medicine containing the same active ingredient as a particular originator* and is not (or no longer) patent-protected. The term "generic*" also includes biosimilars*, unless otherwise specified.

"Generic company" is defined as a company that sells generics*.

"INN" is the International Non-proprietary Name for pharmaceutical substances. A combination product and each of the related mono-products are viewed as separate INNs.

"Launch date" is the date a product* is first offered for sale on a market.

"Licensed generic" is defined as a generic* which may be marketed by another company than the originator company* under a licence granted by that originator company*.

"Litigation" / "Litigation procedure" refers to any type of court proceedings or other formal adversarial proceedings (excluding opposition procedures before any patent office). It comprises the litigation* through all instances in a given procedure.

"Loss of data exclusivity" refers to a situation where a pharmaceutical product is no longer subject to data protection.

"Loss of patent protection" refers to a situation where an invention no longer falls under the protection period provided by a patent (including SPC*).

"Loss of exclusivity" ("LoE") refers to a situation where a product no longer benefits from an exclusive right, e.g. because of expiry of patent, SPC* and data exclusivity (and marketing exclusivity).

"MA" stands for Marketing Authorisation.

"Medicines for human use" refers to all medicines for human consumption.

"MRP" stands for Mutual Recognition Procedure.

"New Chemical Entity" (NCE) refers to a new chemical substance, duly authorised by the competent authority, that has not been previously available for therapeutic use in human beings.

"New Molecular Entity" (NME) refers to a new chemical or biological substance, duly authorised by the competent authority, that has not been previously available for therapeutic use in human beings.

"NPV" stands for Net Present Value.

"Originator" is defined as a novel drug that was under patent protection when launched onto the market.

"Originator company" is defined as a company that sells originators*.

"OTC medicines" refer to medicines that are sold over the counter, i.e. without prescription.

"Own generic" is defined as a generic* version of a particular originator* that is produced and/or marketed by the originator company* of that particular originator*.

"Patent settlement agreement" should be understood as any formal or informal agreement, such as a simple gentlemen's agreement, which settles an actual or potential patent issue, whether it was brought before a court or any other body or settled out of court without engaging in any formal adversarial procedure.

"PCT" stands for Patent Cooperation Treaty.

"Prescription medicines" refers to medicines that cannot be bought without a prescription by a physician.

"Product" refers to an actually marketed product* for which a marketing authorisation has been granted (e.g. different dosages, administration forms).

"R&D" stands for research and development.

"R&D pole" stands for R&D efforts directed towards a certain new product* or technology. An R&D pole* may cover R&D on one or several molecules and molecule combinations.

"RMP" stands for Reference Medicinal Product.

"RMS" stands for Reference Member State.

"SMPC" stands for Summary of Product Characteristics.

"SPC" stands for Supplementary Protection Certificate.

A. INTRODUCTION

(1) This document contains the Preliminary Report for the pharmaceutical sector inquiry launched by the European Commission on 15 January 2008 and presented to the general public on 28 November 2008 in Brussels. The document sets out the preliminary findings of the sector inquiry and forms the basis for the public consultation.

(2) The sector inquiry sets out to identify whether there are obstacles to market entry for prescription medicines for human use. It focuses on obstacles for generic products, i.e. products that can enter the market upon loss of (patent) protection of the original product. It also deals with obstacles for innovative products, i.e. obstacles to competition between originator companies. As it is a competition inquiry, it focuses on the behaviour of companies, rather than on the regulatory framework.

(3) The report aims to give an overview of the pharmaceutical market and in particular its shortcomings with respect to the entry obstacles described above. It is not the purpose of this report to identify wrongdoing of individual companies or provide guidance on the compatibility of certain behaviour with EC competition law[1]. This can only be done in the context of separate investigations fully respecting the rights of defence of the companies concerned.

The Reasons for the Sector Inquiry

(4) The pharmaceutical sector is vital to the health of Europe's citizens. Europe's patients need access to safe, innovative and affordable medicines. The demand for innovative products is expected to increase given the ageing population of the European Union and the increased knowledge of the human condition. Europe's patients are looking in particular for new and/or improved medicines with fewer side effects to treat new and existing diseases. This calls for constant innovation. Adequate and efficient patent protection is an essential prerequisite for future innovation. It allows companies to recoup investment costs and yield an adequate profit for the risks associated with the innovative process.

(5) As well as being a vital sector of the economy, pharmaceuticals are also a major expense. In 2007, the total size of the pharmaceutical market for prescription and non-prescription medicines for human use in the EU was ex-factory € 138 billion[2] and at retail level € 214 billion[3]. This corresponds to annual expenditure on pharmaceuticals of around € 430 for every citizen in the 27 Member States of the European Union. This is, of course, an average amount as there are significant variations over the life cycle of

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1 For further details see Annex EC Competition law (Annexes to Chapter A).

2 Including hospital and retail sales.

3 Including hospital and retail sales and prescription and non-prescription medicines.

citizens in terms of medical attention needed and health expenditure. In almost all Member States, public health schemes play a decisive role in ensuring that patients receive appropriate treatment. They are (co-)financed through public budgets. Like all public budgets, the health budget is under enormous pressure to keep costs under control. Generic medicines, which can enter the market upon loss of (patent) protection of the original product, make a very significant contribution to cost savings, as they greatly reduce the price of medicines. Their access to the market must therefore not be delayed.

(6) In January 2008, the Commission launched a sector inquiry because there were signs that competition in the pharmaceutical sector might be distorted. The number of new chemical entities coming to the market seemed to be in decline. Moreover, generic manufacturers might not be able to enter the markets as quickly as one would expect. The Commission therefore concluded that the pharmaceutical sector required an in-depth investigation.

(7) A sector inquiry looks – as indicated above – into the question of whether and to what extent the behaviour of undertakings is amongst the causes for the perceived malfunctioning of the market. However the Commission services are fully aware that the pharmaceutical sector is highly regulated. From research to marketing, the existing regulations have a major impact on competitive conditions. In particular, the regulations relating to patents, marketing authorisations and pricing and reimbursement decisions appear to affect the competitive process. The Commission services therefore welcomed comments submitted by companies on the regulatory framework in which they operate. This did not, however, change the focus of the inquiry, namely, on the extent to which company practices affect market entry. Two types of companies are of particular interest: those bringing new products onto the market (these are generally referred to as originator companies in this report) and those that bring generic versions of these products on the market at the end of the (patent) protection period (they are referred to as generic companies).

Issues under Investigation

(8) In the light of the above the sector inquiry focuses on two issues: (1) Are there obstacles to market entry for generic companies caused by practices of originator companies? and (2) are there obstacles to market entry for originator companies caused by practices of competing originator companies. Shortcomings in the regulatory system reported by the respondents are also summarised.

(9) With respect to the first issue (obstacles to generic entry), the Commission services investigated in particular all patent and product life cycle strategies of originator companies and their implementation into practice. Practically all originator companies subject to this inquiry have developed a tool-box of instruments and measures for how to prepare for and react to generic entry. Issues that are addressed in more detail in this report include:

(a) patenting activities of originators,

(b) contacts, disputes and litigations between originator and generic companies,

(c) opposition procedures and appeals before patent offices,

(d) patent settlements and other agreements between originator and generic companies,

(e) interventions of originator companies before national authorities deciding on marketing authorisation, pricing and reimbursement of generic products,

(f) promotional activities, including follow-on products, and

(g) second generation products.

A separate section shows how these issues are interlinked and may be used by companies in cumulative ways. The report also contains an empirical analysis of the conditions under which generic entry can be expected to occur and what its economic effects are.

(10) As to be expected, generic entry appears to focus on products with a high turnover (including so-called blockbusters, which generate an annual turnover of more than US$ 1 billion at global level). On the other hand, the revenues from these products are often the backbone of many originator companies, which they defend vigorously. Delays in the market entry of such high turnover products thus need to be looked at with particular interest.

(11) As regards to the second issue (relationship between originator companies), the sector inquiry investigated in particular the patent strategies of companies, contacts, disputes and litigation between originator companies, opposition procedures before patent offices and (settlement) agreements between them.

(12) It is very important to underline that the preliminary findings in the sector inquiry do not address the question of whether any behaviour identified in this report could amount to a violation of EC competition law, not least as this would require the definition of the relevant product markets, which is rather complex in the pharmaceutical sector.

Clarifications of the Scope

(13) In its opening decision, the Commission explained that the products subject to the inquiry are prescription medicines for human use. This excludes medicines sold over the counter (OTC), i.e. without prescription, and products for animal use. Nor are medical devices and health services subject to the inquiry. For in-depth investigation the Commission selected more than 200 substances. The sample consisted of top selling molecules for which the exclusivity period had expired in the period from 2000 to 2007.[4] The selected molecules accounted for € 57 billion, i.e. 47% of the overall turnover of prescription medicines in the EU in 2007.

(14) The geographical scope of the inquiry is the EU27, i.e. the 27 Member States currently forming part of the European Union. Comparisons with other regions, in particular the USA, appeared however useful for the inquiry.

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[4] For further details see Annex: Methodology (Annexes to Chapter A).

(15) It has to be stressed that the report deals primarily with competition between originator and generic companies, or between originator companies alone. The report does not contain a specific chapter on competition between generic companies, which is primarily based on price. Nor are issues such as the compatibility of restrictions to parallel trade, which have for long been the priority area of antitrust enforcement in the pharmaceutical sector, covered in this report. This should not be understood to mean that the protection of parallel trade no longer plays a role in EU competition policy in relation to the pharmaceutical sector.[5]

Milestones Already Achieved in the Sector Inquiry

(16) The sector inquiry was opened by Commission Decision of 15 January 2008.

(17) The inquiry began with unannounced inspections at a range of pharmaceutical companies, most of them originator companies, but also some generic companies, in order to gather inside information from prominent stakeholders. The companies concerned were carefully selected, account being taken amongst other things of the expiry dates of certain blockbusters and reports on certain patent settlements. More than 20,000 pages were copied during these inspections, which brought to light documents that could not have been gathered otherwise (e.g. through information requests). They contained very valuable information for the purpose of the inquiry as evidenced by the quotes used for this report.

(18) Following the opening decision the Commission services met most stakeholders active in the pharmaceutical sector to hear their views and receive their input to help fine-tune the scope of the inquiry. This included meetings with the relevant industry associations at the European level: EFPIA representing originator companies and EGA representing generic companies, as well as meetings with representatives of consumer and patients associations, insurance companies, doctors, pharmacies, wholesalers, hospitals, parallel traders, patent offices and national competition authorities. The services of DG Competition, primarily responsible for the pharmaceutical sector inquiry, also cooperated closely with the other services of the Commission bearing a responsibility for the pharmaceutical sector. Finally the Commission services had informal exchanges with competition authorities outside the Community. This cooperation was continued throughout the entire process of the first phase of the inquiry leading to the publication of this report.

(19) From March to May 2008, the Commission sent out more than 200 questionnaires to complete and complement the information previously gathered. The main addressees of these questionnaires were the largest originator and generic companies active in the EU. In total, 43 originator companies and 27 generic companies cooperated actively with the Commission. They represent over 80% of the total turnover generated with

[5] See in this respect the judgment of the ECJ of 16 September 2008 (Joined Cases C-468/06, C-469/06, C-470/06, C-471/06, C-472/06, C-473/06, C-474/06, C-475/06, C-476/06, C-477/06, C-478/06 Sot. Lélos kai Sia), which found that the protection of parallel trade in the pharmaceutical sector is within the scope of EC competition law.

prescription medicines in the pharmaceutical sector of the European Union. Some companies, originally addressed, were subsequently released from the obligations to reply. For further details on the methodology see the Annexes to Chapter A, which also sets out how the Commission services dealt with the issue that not all companies were able to provide complete information for all the years covered by the inquiry.

(20) Other stakeholders such as public authorities (marketing authorisation, pricing and reimbursement bodies), parallel traders, wholesalers and associations representing insurance companies, doctors, pharmacists, patients and consumers were also addressed. Overall the Commission services were satisfied with the degree of cooperation from all stakeholders, although cooperation from certain national authorities was initially a challenge given the tight deadlines.

(21) In total more than 6,000 submissions – often covering documents with hundreds of pages and very extensive spreadsheet tables – were received and analysed in the course of the sector inquiry. The total size of the file now amounts to more than 3 GB. In this light it is probably fair to assume that the sector inquiry is one of the most thorough investigations of the European pharmaceutical sector ever.

Envisaged Conclusion of the Sector Inquiry

(22) With the presentation of this report on 28 November 2008 and its publication on the same day, the Commission services will be launching a public consultation on its main findings. All stakeholders are invited to submit their comments on these findings not later than 31 January 2009 on any aspect of the report that they find of interest. For further details on the public consultation, reference is made to chapter E, which contains the conclusions and the launch of the public consultation.

(23) The Commission is expecting to conclude the sector inquiry in spring/summer 2009 when it plans to adopt its final report on the inquiry in the form of a Commission Communication. In the light of the findings set out in this and the final report, the Commission intends to take action where deemed appropriate.

B. MARKET CHARACTERISTICS AND STRUCTURE OF THE PHARMACEUTICAL SECTOR

(24) The structure of the pharmaceutical sector is unique. It is characterised by a great variety of stakeholders, significant involvement of the State and a high degree of regulation aimed at achieving different objectives. These objectives range from supporting innovation to ensuring a high degree of public health and keeping public expenditure under control. The sector itself is R&D-driven and continued innovation is only possible when the protection of intellectual property rights (primarily patents) is adequately ensured.

(25) Before presenting the main findings of the sector inquiry (Chapter C of this report), a general overview of the sector is given. The first section describes the main market features, namely the role of the most important stakeholders and the life cycle of a pharmaceutical product. The subsequent section describes the main regulatory framework governing patents, marketing authorisations and pricing/reimbursement mechanisms. This is done in order to facilitate the understanding of the subsequent parts of the report.

1. Main Market Features

(26) Total health spending (public and private) varies widely across EU Member States mainly because of the differences in the national health systems. It ranges from approximately 6% of GDP in Poland to around 11% in France and is significantly lower than in the USA (15%).[6]

(27) During the past decades, health care spending has increased, despite continuous efforts to contain costs. Pharmaceuticals have been a key factor driving the growth in health care expenditures. Since 1995, spending on pharmaceuticals has increased faster than total health spending in OECD countries. In 2006 pharmaceutical spending accounted for 17% of health spending in the OECD. Today, pharmaceutical spending is the third largest component in health care spending after hospitals and ambulatory care.[7]

(28) In 2007, the total size of the pharmaceutical market in the EU was € 138 billion[8] on an ex-factory basis, which is almost one third of the global turnover. It includes prescription and non-prescription medicines for human use. As indicated above, at

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6 See the paper "Some key features of growth and cross-country differences in health-care spending" presented on 17.9.2008 at the joint conference by the EU and the OECD, p. 9. http://ec.europa.eu/social/main.jsp?catId=443&langId=en&eventsId=106&furtherEvents=yes

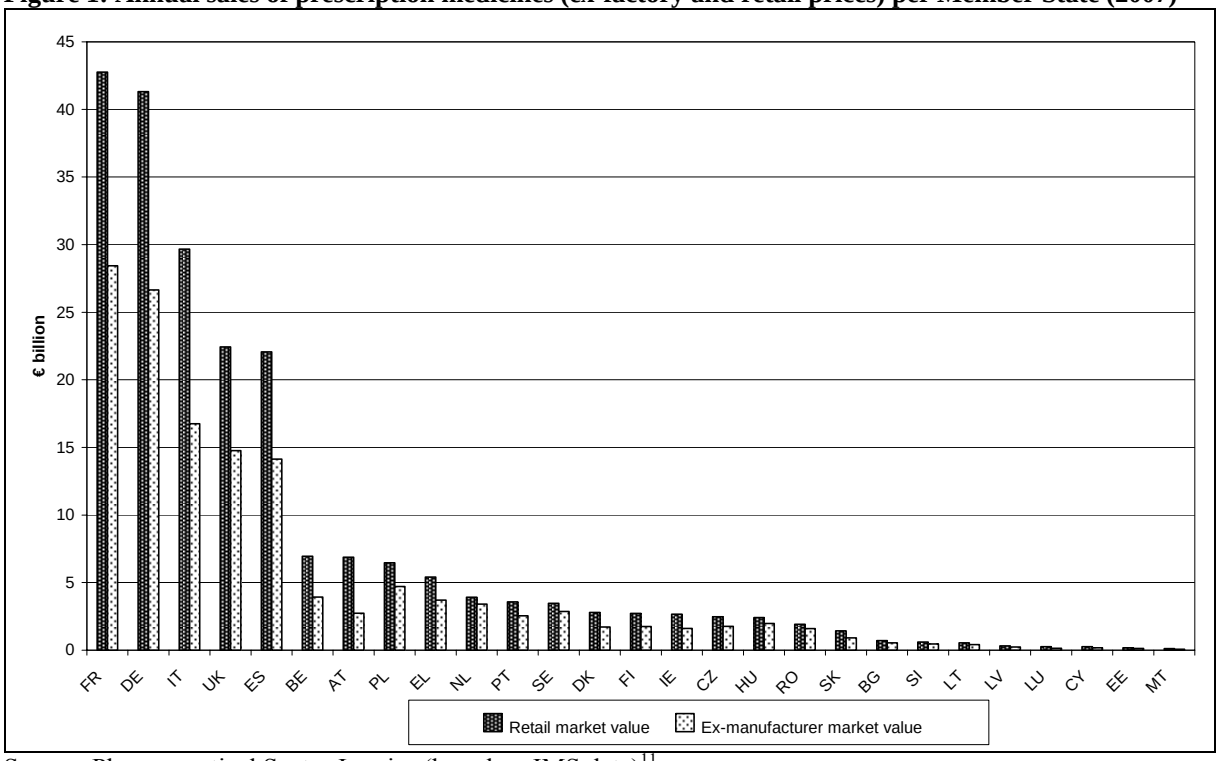
7 See the paper "Some key features of growth and cross-country differences in health-care spending" presented at the joint conference by the EU and the OECD, pp. 5-7. http://ec.europa.eu/social/main.jsp?catId=443&langId=en&eventsId=106&furtherEvents=yes

8 Including hospital and retail sales.

retail level, the total size of the market for the same period was € 214 billion[9]. This corresponds to an annual amount of approximately € 430 for every European citizen.

(29) Concerning pharmaceuticals available only upon prescription, the turnover on an ex-factory level generated in the EU in 2007 amounts to € 122 billion (see figure below for a breakdown per Member State). Thereof, the originator and generic companies included in the sector inquiry account for a turnover of € 98 billion, which is 81% of the EU market. The 219 molecules selected for the analysis in the sector inquiry account for € 57 billion, i.e. 47% of the overall turnover of prescription medicines in the EU in 2007.

Figure 1: Annual sales of prescription medicines (ex-factory and retail prices) per Member State (2007)[10]



Source: Pharmaceutical Sector Inquiry (based on IMS data)[11]

Note: Sales information for Greece, Romania, Bulgaria, Slovenia, Cyprus and Malta include non-prescription medicines. Figures for Cyprus and Malta are based on EFPIA (2006).

(30) Figure 2 shows the simplified supply chain for a prescription medicine from production by pharmaceutical companies to consumption by patients. While

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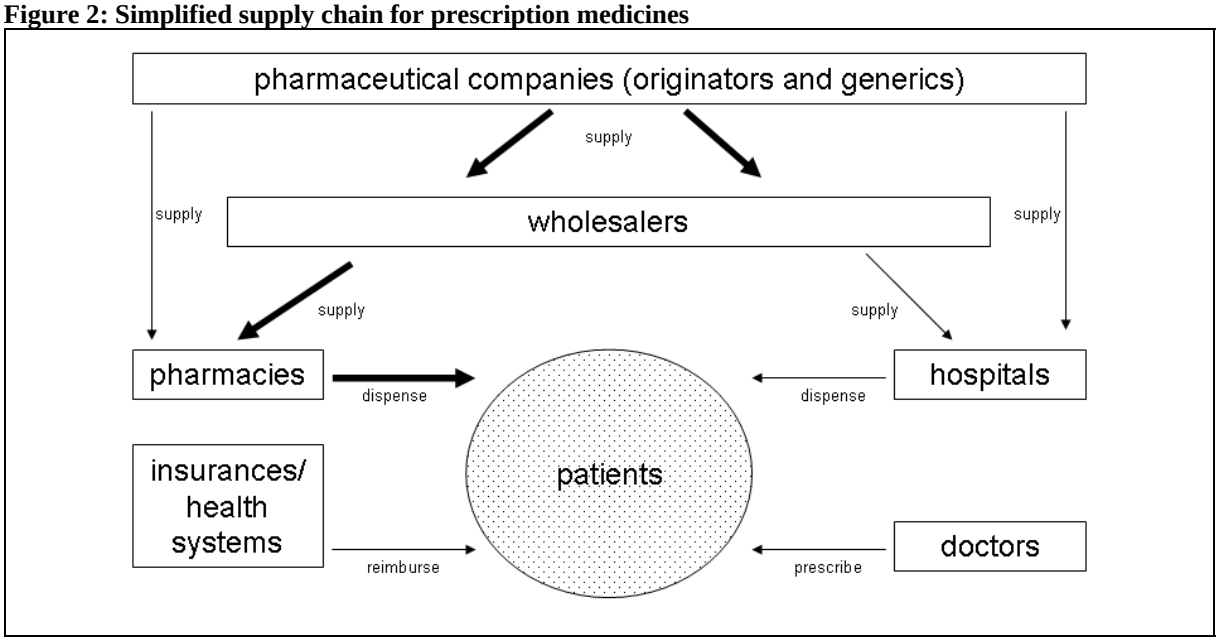
9 Including hospital and retail sales and prescription and non-prescription medicines.

10 Please note that unless otherwise stated, the turnover figures reported in Chapter B are expressed at ex-factory level.

11 Data and other information obtained from IMS Health (IMS), a provider of pharmaceutical data services, that are cited or used in this Report (including in empirical analyses performed by the Commission) were obtained by the Commission pursuant to Article 18 of Council Regulation 1/2003. IMS has not acted as an advisor, expert, or consultant in connection with this report or, more generally, in connection with the inquiry. Further references to IMS in this report should be understood in the same way.

differences exist between Member States, the basic features are identical throughout Europe. The main supply channel (indicated by bold arrows) runs from the pharmaceutical company through wholesalers and pharmacies to the patients (retail sale). In general, medicines are prescribed by medical doctors and reimbursed by the insurance or health system.

Figure 2: Simplified supply chain for prescription medicines



Source: Pharmaceutical Sector Inquiry

Note: In certain national health systems, the patients do not pay for the medicines they receive. Instead, the insurances/health systems reimburse doctors, hospitals and pharmacies directly.

(31) Apart from the retail chain described (pharmaceutical companies, wholesalers, pharmacies, patients), medicines can also be dispensed to patients by hospitals. As far as distribution is concerned a distinction must be made between sales to hospitals and sales to pharmacies via wholesalers (retail distribution). Hospitals more often buy directly from pharmaceutical companies, e.g. following a tender process, but they also buy part of their requirements via wholesalers. According to the data provided by the respondent companies, in the EU, the retail segment was the main source of income for most pharmaceutical companies. In 2007, the turnover from prescription medicines obtained through the retail channel was approximately three times the turnover generated through the hospital channel.

1.1. Main Structure

1.1.1.1. The Supply Side

(32) On the supply side, the sector is characterised primarily by two types of companies. The first type consists of R&D-based companies (subsequently called "originator companies"), which can range from very large multinationals to SMEs concentrating on certain niche products. These companies carry out research into new pharmaceuticals, develop them from the laboratory to marketing authorisation and sell them on the market.[12] Their products are largely patent-protected.

(33) The second type of company is generally referred to as a "generic company". They produce and sell pharmaceutical products which have lost their exclusivity status (for a definition see box below). These generic products contain the same active pharmaceutical ingredients (APIs) and can therefore be used for the same treatments. However, the products are sold at a much lower price than the original product, which helps contain public health budgets.

Box: Loss of exclusivity

The term "Loss of exclusivity" (LoE) as used in this report comprises two forms of protection: (1) protection through patents (possibly extended by the so-called Supplementary Protection Certificate, "SPC"), and (2) protection through marketing and data exclusivity. The different types of protection will be explained in more detail in subsequent chapters.

(34) Both types of companies sometimes buy active pharmaceutical ingredients (APIs) from specialised companies (upstream activity) unless they produce the APIs themselves. Both categories of company have to deal with a variety of government agencies, including patent offices, in Europe most prominently the European Patent Office (EPO), and marketing authorisation offices, be it at national or European level.[13]

(35) The subsequent sections focus on the activities of originator and generic companies surrounding prescription medicines for human use (as opposed to non-prescription, also referred to as over-the-counter (OTC) products, veterinary products or medical devices).

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[12] In particular smaller companies might not be active in the development and marketing phase, or at least not on their own.

[13] Traditionally the business models of originator and generic companies were considered mutually exclusive, although in recent times a trend can be observed whereby originator companies are acquiring generic companies and generic companies are becoming active in research.

1.1.1.2. Originator Companies

(36) Originator companies are active in R&D, manufacturing and marketing patented medicines. Their business model is based on research into, and the development of, new chemical entities (NCEs) and the incremental improvement of others already on the market.[14] The originator companies addressed by the sector inquiry were primarily those which are active in a great number of pharmaceutical areas and across various geographic markets. They are mostly multinationals.

(37) In addition to NCEs, some 60% of the respondent originator companies are active or intend to become involved in research into and production of biopharmaceuticals in the immediate future. While the sector inquiry gathered information on activity in the biopharmaceutical area, this is not the main focus of the report, as patents on these products generally have some years left before LoE. Thus, competition is confined to the originator-originator segment.

(38) The main focus of activity reported by originator companies is on reaching unmet medical needs by bringing new prescription medicines to the market. For most of the originator companies, activities performed in-house range from the discovery of new compounds to life cycle management before or after patent expiry. In between, they are involved in research and development, promotion and sales of their pharmaceutical products. They carry out this wide range of activities alone or in collaboration with other companies or entities of various types such as universities and research institutes. The collaboration can take a number of forms, including joint-research and licensing agreements, co-development and co-marketing agreements, co-promotion and joint ventures.[15]. At least large originator companies have their own sales and marketing networks.

(39) Most of the originator companies consulted as part of the inquiry have a world-wide presence, with different departments located in different regions. These are real multinational companies acting in a global environment. Typically, strategic business decisions with regard to R&D projects are made at a global level while marketing and distribution decisions are rather taken at local level.

(40) In addition to large originator companies there are numerous SMEs, which typically lack the resources required to conduct all necessary steps from basic research to the marketing and distribution of the finished product. SMEs in the pharmaceutical sector, therefore, tend to specialise in innovation in a well-defined and narrow field (niche), for example focusing on specific indications or pharmaceutical formulations. These SMEs either decide to out-license or sell their innovations to larger companies who have the resources to conduct clinical trials and the necessary marketing. Large

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[14] Pharmaceutical companies are among the higher investors in R&D in the EU. For information on R&D investment levels, please see 'The 2008 EU Industrial R&D Investment Scoreboard' available at http://iri.jrc.ec.europa.eu/reserach/scoreboard_2008.htm

[15] For a description of the most common types of agreements among originator companies, please see Chapter C.3.4.

pharmaceutical companies are increasingly in-licensing new products. Currently 25% of the molecules in clinical development have been acquired from other companies, including SMEs. This is confirmed by the findings of the sector inquiry and shows the importance of SMEs for maintaining the innovative character of the pharmaceutical sector.

(41) Leaving competition from generic companies and parallel trade aside, competition between originator companies appears to take two main forms. First, direct competition between patented products of two or more originator companies prescribed for the same treatment can exist as long as there is a degree of substitutability between products in terms of belonging to the same therapeutic area (also referred to as "competition *in* the market"). Here, an important parameter for competition is the relative efficacy and absence of side-effects of a medicinal product. Moreover, marketing and promotional activities are said to play a significant role. Depending on the national pricing and reimbursement system there might also be a certain degree of competition on prices.

(42) Secondly, and more importantly, there is – over a longer time – competition through innovation in order to bring a patented product with limited substitutability to the market. Such patented products are essential for generating profit because they give an originator company the opportunity to reap the benefits during the exclusivity period. The need to innovate translates into a competition to be the first to discover and patent new molecules suitable to be developed into pharmaceutical products which are eventually launched onto the market.

(43) The respondent originator companies are also large employers. Globally they employed some 1,150,500 people of which 180,000 were working in R&D for prescription medicines in 2007. The originator respondent companies employed alone approximately 360,000 staff in the EU in 2007. Nearly 60,000 were working in R&D for prescription medicine.

1.1.1.2.1. The Largest Originator Companies

(44) Analysis of the information provided by the companies consulted as part of the sector inquiry focuses on “prescription medicines”. This segment constitutes on average approximately 80% of the turnover of the originator companies consulted.

(45) The table below provides a ranking of the ten originator companies (selected from the total number of companies covered by the sector inquiry) with the highest turnover in the EU27 in 2007 in prescription medicines. The table also provides the turnover obtained in the USA and at global level for the same period as well as the EU market share in relation to the global market.

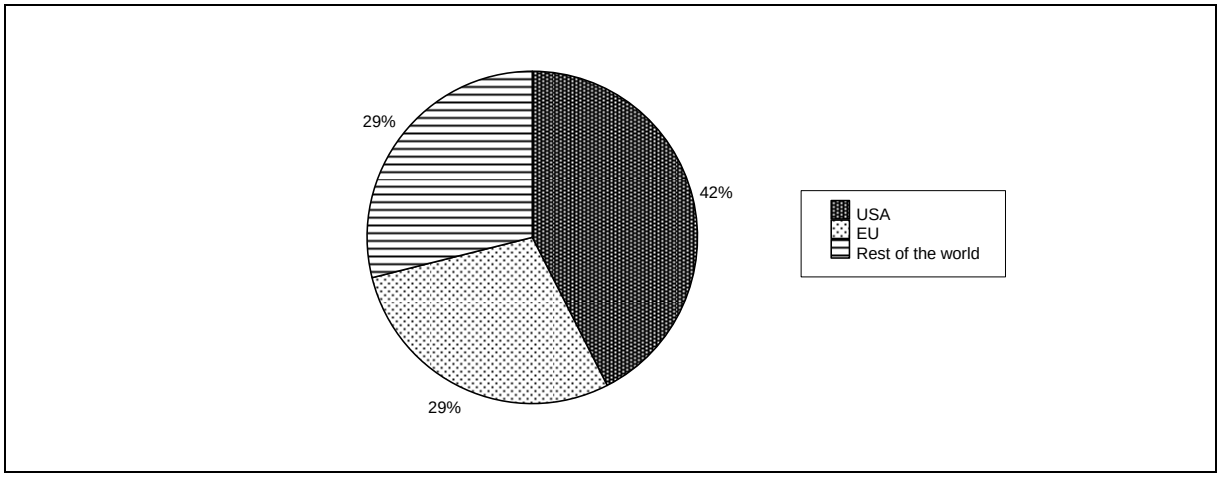
Table 1: Largest originator companies in the EU by turnover in prescription medicines (2007)

Company	Rank	Turnover EU (€ thousand)	Turnover USA (€ thousand)	Turnover global (€ thousand)	Share EU/global
Sanofi-Aventis	1	11,064,138	9,474,424	28,051,716	39%
Glaxo-Smith-Kline	2	8,189,486	13,513,760	28,032,381	29%
Pfizer	3	8,004,675	15,589,595	32,433,183	25%
Hoffmann LaRoche	4	6,981,780	9,009,986	22,391,735	31%
Astra-Zeneca	5	6,260,463	8,400,802	19,819,190	31%
Novartis	6	5,463,289	6,473,219	17,530,229	31%
Wyeth	7	3,332,506	6,159,070	11,590,479	29%
Johnson & Johnson	8	3,309,067	11,385,274	18,027,103	18%
Eli Lilly	9	3,201,487	7,016,469	12,869,539	25%
Abbott	10	2,845,826	5,695,479	10,878,652	26%
Total		58,652,717	92,718,078	201,696,207	29%

Source: Pharmaceutical Sector Inquiry

(46) For all ten companies, the EU market is highly relevant with a combined total turnover of nearly € 59 billion. Nevertheless, the total turnover for prescription medicines obtained in the USA is significantly higher than in Europe, despite half of the companies listed being European. In 2007 the ten leading pharmaceutical companies in Europe generated on average almost 30% of their total global turnover in the EU.

Figure 3: Distribution of turnover for prescription medicines by originator companies in 2007 for USA, EU and Rest of the world



Source: Pharmaceutical Sector Inquiry

(47) A similar picture emerges when a larger sample of originator companies examined is used to calculate annual turnover figures. In 2007, and considering the figures on a regional basis, the USA was the area where the highest amount of pharmaceutical sales for prescription medicines by originator companies was achieved. This was followed,

some way behind, by the EU and the rest of the world (each accounting for 29% of the aggregated turnover).

1.1.1.2.2. The Best Selling Products

(48) Top-selling products, so-called blockbusters are the backbone of large originator company strategies aimed at recouping R&D investments (also those of failed products) and earning a profit. This section provides an overview of the top selling products.

(49) The table below shows the top ten prescription medicines and their respective therapeutic use ranked by turnover in the EU in 2007, the annual turnover at a global level for the same products and the relationship between the global turnover for the product and the total company turnover (all products) in %.

(50) Table 2 demonstrates that some blockbusters account for a very large share of total turnover of the companies concerned (up to 55%). On average the most important blockbusters in the above table generate 19% of the total global turnover of the originator companies concerned. In addition, a significant number of these and other blockbuster medicines are close to expiry. According to the respondents' replies, 46% of INNs in the T50 list[16] will lose patent protection (including SPC or other extensions if applicable) between 2008 and 2012. Considering those INNs still covered by patent protection at the beginning of 2008, 76% of these will lose patent protection (including SPC or other extensions if applicable) before the end of 2012. Indeed, this underlines the degree of dependence of certain companies on the success of their blockbuster medicines and the efforts to prolong their protection periods.[17]

(51) Based on the data provided by the companies, blockbuster medicines offer profit margins of up to 80%. On average, approximately 30% of the turnover is reported as profit. This is a rather conservative estimate taking into account the fact that some companies did not report any data on profitability and others reported surprisingly low figures when compared to other blockbuster medicines. No convincing explanation was given for these low profitability rates. In any event it seems fair to conclude that the companies rely heavily on their blockbuster medicines and have significant economic incentives to extend the economic life of such medicines for as long as possible.

(52) Finally, Table 2 above shows that there are a significant number of players in the market: the ten blockbuster medicines originate from nine different companies.

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16 Please see Annexes to Chapter A: Methodology for an explanation of this list.

17 Some commentators argue however that the business model focusing on blockbusters could be of decreasing importance partly in view of the emergence of new, more focused therapeutic approaches in medicines. As indicated further below, most originator companies reported that the future of the sector lies on biopharmaceuticals and personalised medicines.

Table 2: Top selling prescription medicines (blockbusters) in the EU27 (2007)

Company	Rank	Product name (INN)	Therapeutic class (ATC[18] 1st level)	EU27 turnover (€ thousand)	Global turnover (€ thousand)	Product share of company turnover (global)
Pfizer	1	Lipitor (atorvastatin calcium)	cardiovascular system	1,917,151	9,252,101	30%
Glaxo Smith Kline	2	Seretide/Advair (fluticasone + salmeterol)	respiratory system	1,795,800	5,108,540	18%
Johnson & Johnson	3	Risperdal (risperidone)	nervous system	1,737,023	6,232,653	35%
Sanofi-Aventis	4	Clopidogrel (clopidogrel)	blood and blood forming organs	1,620,000	2,424,000	9%
Hoffmann-La Roche	5	Herceptin (trastuzumab)	antineoplastic and immunomodulating agents	1,345,193	2,954,041	13%
Nycomed	6	Pantoprazole (pantoprazole)	alimentary tract and metabolism	1,289,069	1,685,000	55%
Wyeth	7	Enbrel (etanercept)	antineoplastic and immunomodulating agents	1,159,947	1,492,201	13%
Johnson & Johnson	8	Eprex (epoetin alfa)	blood and blood forming organs	1,109,974	1,637,521	9%
Eli Lilly	9	Zyprexa (olanzapine)	nervous system	1,059,341	3,473,927	27%
Novartis	10	Glivec (imatinib)	antineoplastic and immunomodulating agents	939,194	2,228,470	13%
Total/Average				13,972,692	36,488,454	19%

Source: Pharmaceutical Sector Inquiry

1.1.1.2.3. Main Drivers of Cost for Originator Companies

(53) The sector inquiry also investigated what are the important cost factors for originator companies and where they are incurred.

[18] The WHO's Anatomical Therapeutic Chemical (ATC) classification classifies medicines in different groups depending on their chemical, pharmacological and therapeutic properties and the organ or system they affect. According to the WHO, a new medicinal substance is only included in the ATC system after marketing authorisation in at least one country has been granted. The ATC classification is generally followed by the European Commission to define the relevant product markets in merger transactions.

(54) The sector inquiry confirmed that for large originator companies research is an international activity in the sense that it can be located wherever a suitable research environment exists. Once a potential compound has been identified, there seem to be some synergies for the development phase (pre-clinical and clinical trials), although certain trials need to be carried out nationally or regionally.

(55) Between 2000 and 2007 the respondent originator companies spent on average 17% of their turnover generated at global level with prescription medicines on R&D for new or improved prescription medicines (for further details on the R&D phase for new chemical entities see further below in this Chapter).

(56) Contrary to R&D activities, marketing and promotion activities are typically of national or regional nature. Within this type of activities, convincing doctors that they should prescribe or use a specific product for any given therapeutic indication accounts for the most important share. This activity is generally referred to as "detailing activity", i.e. a sales representative of an originator company visits a doctor to discuss the characteristics of a specific medicine and convince him/her of the safety, efficacy and quality of the product. In the EU in 2007, detailing accounted for nearly half of all marketing expenditures, according to the respondents. This is not surprising as, unlike the USA, direct advertising of prescription medicines to consumers is forbidden in the EU by European legislation.[19] Other marketing and promotion activities include advertising in medical journals, funding clinical studies, writing to doctors, supply of free samples or sponsoring conferences.

(57) Considering only the prescription medicines segment, the figure below shows that on the global level, originator companies spent more money on marketing than on R&D (on average 23% of global turnover in the period 2000-2007).[20] However, during the last few years the increase in the R&D budget was higher than that for marketing. From 2000 to 2007 absolute R&D expenditures constantly increased (with the exception of 2003) from € 34 billion to € 49 billion (for the sample of companies that provided complete data). In the same time period, marketing and promotion expenditures rose from € 52 billion to € 57 billion.[21] It should be stressed that the difference between marketing and R&D expenditure is even greater, if non-prescription medicines are included.

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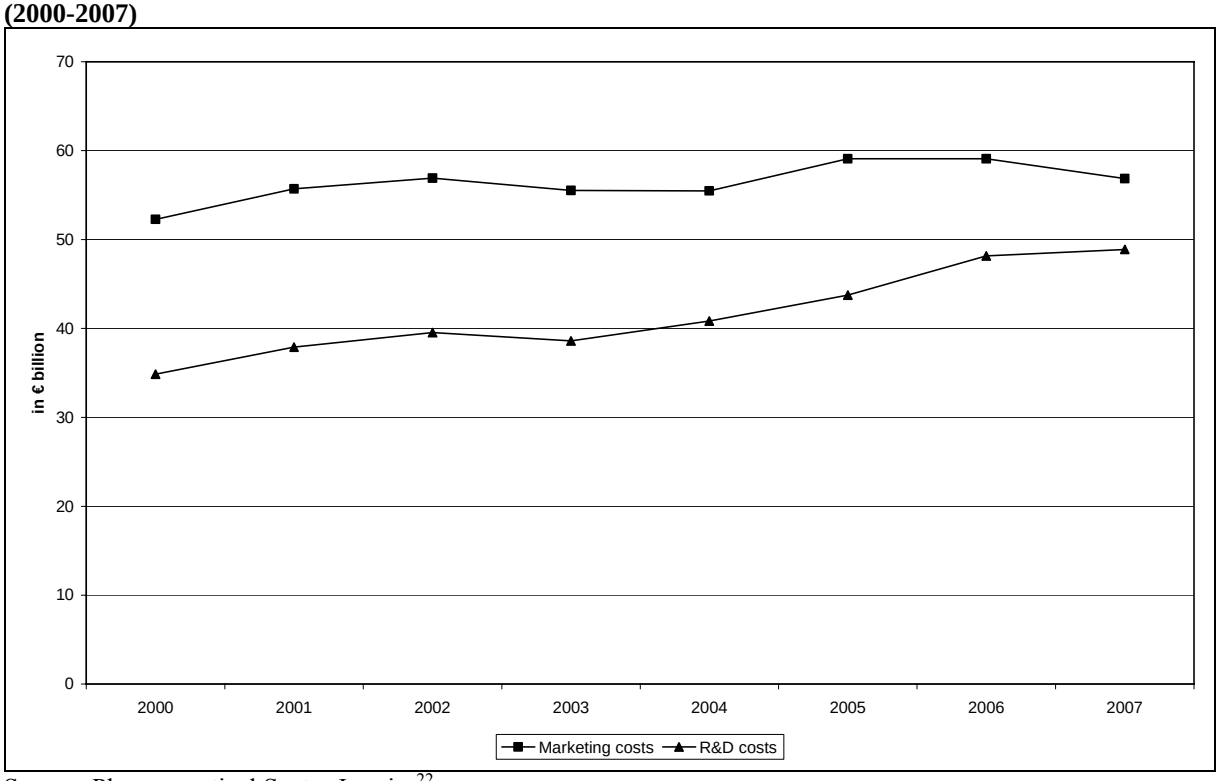
[19] Article 88 of Directive 2001/83/EC of 28.11.2004 on the Community code relating to medicinal products for human use as amended by Directive 2004/27/EC of the European Council and the Parliament of 31 March 2004 (OJ L311/67 p.67). The Commission is preparing a Directive modifying Directive 2001/83/EC.

[20] In the EU between 2000 and 2007, companies reported to have spent on average between 20 and 25% of their turnover on marketing. For the development of marketing costs, see Chapter C.2.5.

[21] A decrease is observed from 2006 to 2007 from € 59 billion to € 57 billion.

Figure 4: Trends in global R&D and marketing costs by originator companies for prescription medicines (2000-2007)



Source: Pharmaceutical Sector Inquiry[22]

(58) As mentioned above, R&D is basically a global activity and, hence, a comparison between R&D and marketing expenditures at the global level, as shown in Figure 4, is warranted. Nevertheless, a regional breakdown of R&D is used to indicate the attractiveness of the EU for pharmaceutical research. The table below compares the total marketing costs to the total R&D costs for prescription medicines in the EU in 2007. It shows that also in the EU expenditure on marketing is significantly higher than on R&D.[23]

Table 3: R&D and marketing costs for prescription medicines in the EU (2007)

Marketing (€ thousand)	R&D (€ thousand)
15,697,745	13,344,108

Source: Pharmaceutical Sector Inquiry[24]

(59) Based on the global figures reported by the originator companies, the number of employees in marketing and sales departments is twice the number of those working in R&D. In some companies, this ratio can reach even one employee in R&D to three in

22 Based on an available sample size of 30 originator companies.

23 The data provided by industry associations such as EFPIA shows different results as they include Switzerland and other European countries not members of the EU.

24 Based on an available sample size of 31 originator companies.

marketing. It should be highlighted, however, that efforts to reduce the marketing and sales workforces were reported by many originator companies for 2006 and 2007.

(60) The sector inquiry also found that manufacturing activities can be located anywhere in the world and, generally speaking, are carried out in only a limited number of locations. As seen below, manufacturing involves significant costs for originator companies. However, the percentage of turnover used for manufacturing can vary widely from one company to another.[25] Table 4 shows that in general manufacturing, marketing and promotion as well as R&D are the three major cost factors in the pharmaceutical industry. Administration and distribution costs[26] are significantly lower. Concerning the regional distribution of costs, it should be noted that manufacturing is located mostly outside the EU.

Table 4: Global share of cost factors as a percentage of annual turnover (prescription medicines, 2007)

Manufacturing Costs	Marketing and promotion costs	R&D costs	General administration and overhead costs	Distribution costs	Other annual costs
21%	20%	18%	11%	1%	2%

Source: Pharmaceutical Sector Inquiry[27]

(61) Generally, the respondents stated that they do not face capacity constraints neither for production nor concerning their input facilities.[28] However, among those most affected by capacity constraints are the biopharmaceutical producers. The special nature of the substances required to develop biopharmaceuticals, such as living tissue, makes their supply more difficult than the supply of bulk chemicals as active ingredients for small molecule-based medicines.

1.1.1.2.4. Industry Trends

(62) Many originator companies reported that they are currently undergoing a phase of transition. According to the respondent companies, the following trends are particularly noteworthy: (a) difficulties in refilling the pipeline with new products (in particular NCEs); (b) increasing requirements in terms of safety and efficacy for new medicines, resulting in higher R&D costs; (c) increasing control over prices and reimbursement levels, as well as on the prescribing practices of doctors by national health authorities; (d) a significant number of patent expiries for important blockbuster medicines; (e) new advances in genomics, proteomics and personalised medicines.

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25 Especially, the production of biopharmaceuticals incurs costs above average.

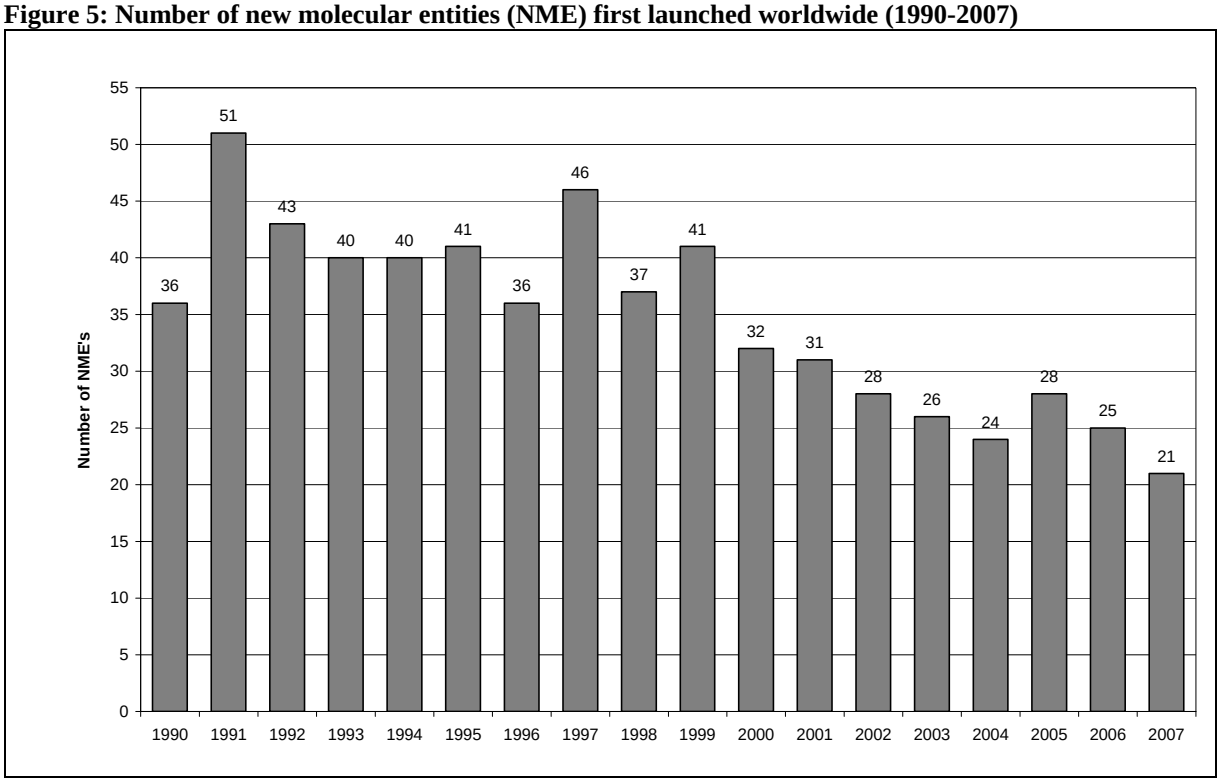
26 Includes only costs not attributed to marketing and promotion costs.

27 Based on an available sample size of 27 originator companies.

28 In the pharmaceutical sector input facilities mainly refers to the supply of active ingredients.

(63) With respect to novel medicines, as shown in the graph below, the number of such medicines reaching the market has decreased over time. From 1995 to 1999 an average of 40 novel molecular entities were launched per year. From 2000 to 2007 the average was only 27.

Figure 5: Number of new molecular entities (NME) first launched worldwide (1990-2007)



Source: EFPIA and CMR International (Thomson Reuter)

(64) In the changing environment, originator companies are re-engineering their business strategies and two main areas have emerged as future targets: patient-focused specialty/personalised medicines and biopharmaceuticals.

(65) As indicated above, approximately 60% of the companies consulted declare that they are involved in, or intend to extend their activities to, biopharmaceutical-based medicines in the immediate future as they expect this field to grow faster than the traditional segment of the market. Companies also report that the success rates for biopharmaceutical-based medicines are twice as high as those of chemical molecules in pre-clinical and clinical development. Companies also state that they have fewer side-effects, greater potency and better selectivity for specific diseases and patient groups.

(66) It was also observed that a growing number of originator companies have acquired or are in the process of acquiring generic companies. They do so with a view to diversifying their product and risk portfolio as well as extending their geographical reach.

(67) Acquisition is seen by companies as an alternative strategy to launching its own generic products or licensing them out. Of course, the acquisition of potential generic competitors could pursue the objective of avoiding or limiting generic competition. However, mergers are carefully scrutinised under EU or national merger control rules.

1.1.1.3. The Generic Companies

(68) Generic companies active on the European market tend to be significantly smaller than originator companies. Many of them are SMEs, largely producing medicines for sale in their local markets. A number of generic companies have recently gained a global presence with a turnover exceeding € 1 billion per year, with more set to join them in the near future. The respondent generic companies employed in 2007 around 130,000 employees in the EU. These work primarily in areas such as development, production and sales.

(69) The basic business model of generic companies is to develop an identical/equivalent medicine to an economically successful originator product and market it as soon as the originator product encounters loss of exclusivity. Occasionally they may even enter the market earlier, most notably in cases where patent(s) of originator companies are not (considered to be) valid or where the generic company believes it has found a way to produce the medicine without infringing any patent rights. As will be shown in Chapter C.2.4., patent settlement agreements between originator and generic companies or the launch of a generic product by the originator company itself can also lead to early generic entry.

(70) Large generic companies are active with a significant range of products, and they are usually able to develop a generic version of any medicine that was previously patent protected. Typically they will, however, concentrate on those originator products that have generated the most significant revenues (for details see Chapter B.1.3.).

(71) Like their counterparts in the originator industry, generic companies are subject to strict regulations, in particular as regards marketing authorisation and national measures for pricing and reimbursement. Generic medicines are tested for their safety, efficacy and quality. However, they do not need to provide detailed information from clinical trials if they can prove that their product is equivalent to the product of the originator company, for which such tests have already been carried out.

(72) Since generic companies provide cheaper versions of pharmaceutical products, they are an important pillar in cost containment measures of national health policies. Most Member States claim that they support the use of generic medicines in their territory in one way or another. Originator and generic companies also agree that generic competition creates and maintains incentives for innovation. Aware of the fact that the period during which originator companies can recoup their investments is limited in time, they are in constant search of new medicines.

1.1.1.3.1. The Largest Generic Companies

(73) The table below shows the largest generic companies in the EU measured by turnover in the EU for prescription medicines.

Table 5: Largest generic companies in the EU by turnover in prescription medicines (2007)

Company	Rank	Turnover EU (€ thousand)	Turnover USA (€ thousand)	Turnover global (€ thousand)
Teva	1	3,388,421	1,449,732	5,763,037
Sandoz†	2	2,041,182‡	1,318,915‡	5,406,935*
Ratiopharm	3	1,021,388	n/a	1,383,599
Stada	4	900,000-1,000,000	6,519	1,570,490*
Mylan	5	800,000-900,000[1]	1,259,525	1,435,811[2]
Actavis	6	496,918	339,905	1,544,154*
Zentiva	7	341,379	0	511,646
Gedeon Richter	8	314,676	14,640	607,067
Pliva	9	282,191	104,670	564,772
Ranbaxy	10	237,432	286,579*	1,181,651*
Total		9,940,683	4,780,485	19,969,163

Source: Pharmaceutical Sector Inquiry

Notes:

* = global turnover for prescription medicines was not provided by the companies so the figures used refer to medicines in general.

† = these figures were originally calculated in US$. The conventional foreign exchange rate used to translate Sandoz initial US$ denominated figures into € was US$ 1 = € 0.72966.

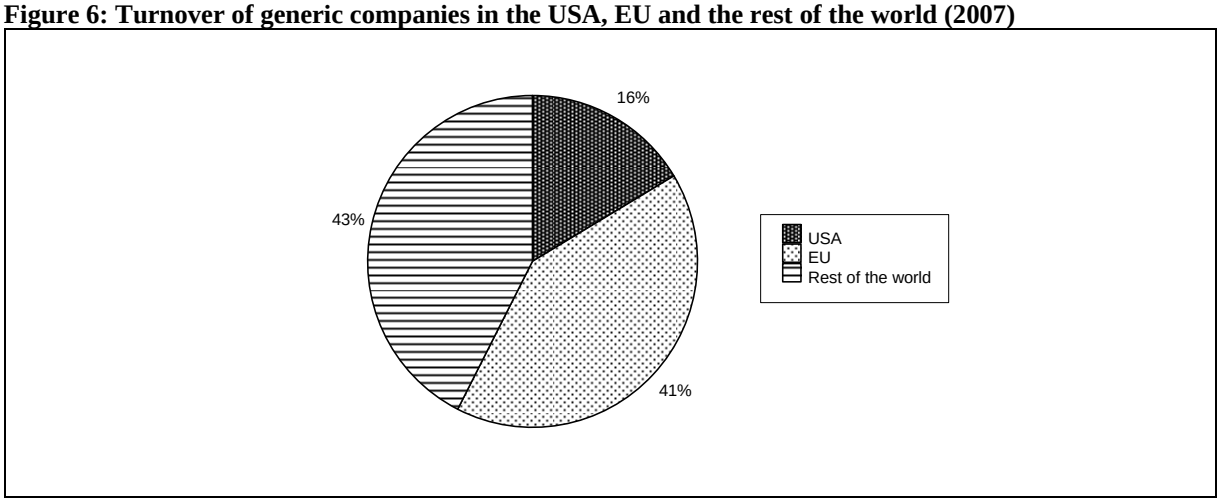
‡ = for prescription medicine only excluding the contribution from the Anti-Infective business and/or OTC activities in some markets.

[1]= EU turnover of Merck Generics for prescription is between € 800 million and € 900 million for 2007 which includes, from the acquisition of Merck Generics Group by Mylan, the EU turnover for the fourth quarter publicly disclosed and amounting to € 272.3 million (US$ 373.1 million).

[2]=Turnover (total sales), in thousand, globally but excluding Merck Generics.

(74) As indicated in the figure below, the generic companies consulted in the sector inquiry generated a combined turnover in the EU in 2007 that was significantly higher than the turnover generated in the USA. This is not surprising as many of the companies are not multinationals and are Europe based. Their activities (in terms of turnover and number of employees) in the USA are therefore limited. However, as can be seen from table above, only the major international operator, Ranbaxy, had slightly higher revenues in the USA than in the EU during 2007.

Figure 6: Turnover of generic companies in the USA, EU and the rest of the world (2007)



Source: Pharmaceutical Sector Inquiry

(75) As a whole, the generic products segment is currently growing faster than originator products segment. According to the submissions received, there are mainly two reasons for this. First, a large number of top-selling medicines are currently approaching patent expiry in both the USA and Europe. These are favourable conditions for generic companies to extend their pipelines in the world's largest generic markets. Secondly, in view of ever tightening health budgets, a growing number of countries on both sides of the Atlantic are promoting generic substitution as a cost-containment measure.

1.1.1.3.2. Best Selling Products

(76) The table below shows the top five selling prescription medicines[29] in the generic segment that accounted for a total turnover of € 1.2 billion in the EU in 2007. It is important to underline that top-selling generic products are typically sold by a number of generic companies. This means that depending on the regulatory framework there could be scope for direct competition between generic companies with a focus on price. As these products are (largely) identical, it could even be argued that there are certain similarities to a market for rather homogenous commodities.

[29] The list of top five selling INNs is based on data for the top five products in terms of EU turnover provided by the respondent generic companies. The five INNs listed in this table account for 34 products by different generic companies.

Table 6: Five top selling generic INNs in the EU27 (2007)

Rank	INN	Therapeutic class	EU27 turnover (€ thousand)	Global turnover (€ thousand)
1	OMEPRAZOLE	alimentary tract and metabolism	557,011	871,072
2	SIMVASTATIN	cardiovascular system	391,457	565,629
3	FENTANYL	nervous system	108,738	296,663
4	METOPROLOL	cardiovascular system	98,464	212,107
5	ALENDRONIC ACID	musculo-skeletal system	80,025	83,952
	Total		1,235,694	2,029,424

Source: Pharmaceutical Sector Inquiry

(77) The sector inquiry also established that generic companies do not enter the market with all existing product versions (formulations), but at least initially opt for those most commonly sold. Several generic companies reported, however, that they are also involved in the development of new formulations, dosage forms and methods of delivery (so-called "line extensions" of existing products). These products are generally designed to capitalise on the profit-maximising potential of differentiating their product from the original product and from competing products of other generic companies. Such products are claimed to more likely receive rapid approval for marketing and have the potential for higher reimbursement rates.[30]

(78) Generic companies also pursue patent strategies to protect their products. Patent strategies are seen by generic companies as a tool to protect generic processes, products and formulations. The development of new formulations, dosages forms or methods of delivery entails also for generic companies early patenting activities.

1.1.1.3.3. The Main Cost Drivers

(79) The development of a generic product requires significantly lower expenditure than the development of a new product by an originator company. Generic producers therefore incur much lower costs for R&D activities. For the approval of a generic product, a company must simply prove that its medicine is equivalent to the original/originator product (reference product). There is no need to carry out and/or submit results of expensive pre-clinical and clinical trials, provided that the originator product is not protected by data exclusivity.[31]

(80) In the case of biosimilars, the R&D costs increase significantly. In the EU, generic companies must submit "comparability data". In order to demonstrate that the quality

[30] Conference Report – Integration for Innovation, R&D Leaders Forum, 1-3 March 2004.

[31] For an explanation of marketing authorisation procedures and data exclusivity periods, please see Chapter B.2.2

of the biosimilar medicine is comparable to the originator (reference) medicinal product, a programme is clearly defined and agreed upon in advance with the European Medicines Agency, EMEA, which defines the set of non-clinical and clinical data that are necessary to sufficiently demonstrate biosimilarity. These requirements along with the living nature of the substances from which biosimilars are produced (they are more scarce and difficult to handle and preserve), increase their development costs.

(81) For generic companies, marketing expenditures also constitute the largest share of their costs, which is clearly higher than the amount allocated to R&D. In some countries, pharmacies have the right or even the obligation to dispense the cheapest generic product. Marketing by generic companies therefore mainly targets the pharmacists, with sales forces visiting them on a regular basis.

1.1.1.3.4. Business Strategies for the Future

(82) Generic companies also see the future in the biosimilars segment. More than half of the respondents are, or will in the near future be, involved in the biosimilars market. Furthermore, generic companies considered that biosimilar products will achieve fundamental cost savings for national health care systems, as existing biopharmaceutical products are generally highly priced medicines. Some respondents stressed the need to develop an adequate regulatory framework; the possibility to use the INN name of the originator (reference) products was mentioned in particular. Smaller-sized generic companies also raised the question of whether they will be able to tackle the financial burden associated with the R&D concerning biosimilar products.

(83) The sector inquiry also revealed that certain generic companies aim to increase their economies of scale by acquiring other (often local) generic operators. A key motivation for these mergers is to extend the geographic reach of a company. The acquisition of Merck Generics by Mylan, or of Barr by Teva are typical examples.

1.1.2. The Distribution Chain

(84) The distribution business for prescription medicines is highly sophisticated (this section covers only the retail channel; for dispensing via hospitals see below). This is in particular due to the need to ensure constant supply to retailers/pharmacists, as well as special needs such as cooling. Within the distribution chain, players include wholesalers, pharmacies and parallel traders (for a schematic overview see above in Figure 2).

1.1.2.1. Wholesalers

(85) The wholesaler is the intermediary between the manufacturer and the pharmacy. In general terms the wholesale sector comprises so-called "full-line" wholesalers and "short-line" wholesalers.

(86) Full-line wholesalers carry and distribute a range of products suitable to meet the needs of those with whom they conduct business (normally pharmacies). They are also able to deliver all medicines used in their geographical area within a short period of time. In

addition, full-line wholesalers generally carry full stock-holding responsibility and usually hold a minimum stock level of two weeks' supplies.

(87) In a number of Member States, in addition to the full-line wholesalers, short-line wholesalers exist. These companies supply a more restricted range of prescription medicines, focusing on the distribution of high-value and high-volume products. The number of medicines stocked by short-line wholesalers can vary substantially, with some holding a very small number of medicines for distribution to a specific group of pharmacies.

(88) In the EU there is no obligation for manufacturers to distribute medicines via wholesalers. Forms of "direct" distribution include direct sales, sales through agents (for example in smaller EU Member States) and Direct to Pharmacy Distribution (DTP). The DTP system will be further described in Chapter C.2.5.

(89) In the EU Member States, the distribution system is subject to "public service obligations"[32] which require "the marketing authorisation holder of a medicinal product" and the "distributor" of a medicinal product actually placed on the market in a Member State to ensure appropriate and continued supplies within the limits of their responsibilities. According to Article 81 of the Directive, a "distributor" is to be interpreted only as an entity which supplies pharmacies and other authorised suppliers of medicinal products (this may, according to the Member State concerned, include pharmacies provided they engage in these resale-activities). The obligation of appropriate and continued supplies includes any type of products which must be delivered to meet the requirements of a specific geographical area in a very short time. The large majority of distributors are SMEs, but there are also some larger cross-border operators, such as Celesio, Alliance Boots and Phoenix.

1.1.2.2. Pharmacies

(90) Retailers of prescription medicines are typically community pharmacies[33]. Further channels of supply include self-dispensing doctors, hospital pharmacies, and, for non-prescription products, pharmacy outlets, medicine stores, herbal shops and even supermarkets and petrol stations.[34] According to information received in the course of the sector inquiry, there are in total approximately 140,000 community pharmacies[35] in

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32 Article 1.18 and 81 of Directive 2001/83/EC of 28.11.2004 on the Community code relating to medicinal products for human use as amended by Directive 2004/27/EC of the European Council and the Parliament of 31 March 2004 (OJ L311/67 p.67).

33 Community pharmacies are pharmacies open to the public.

34 Many EU countries however limit the sale of non-prescription products to pharmacies.

35 The Pharmaceutical Group of the European Union (PGEU), representing Community pharmacies.

the EU, and approximately 21,000 hospital pharmacists[36] employed in pharmacies located inside hospitals mainly dispensing to in-patients.[37]

(91) Most pharmacies in the EU are SMEs or single-unit operators. The pharmacy sector is also highly regulated and some Member States (for example Germany, Italy, Spain and France) prohibit horizontal or vertical integration of pharmacies, or ownership by non-pharmacists. Other Member States establish rules on the distance between pharmacies and number of inhabitants per pharmacy in order to control the distribution of pharmacies in their territory. This is for example the case in Spain, Austria, Italy and France.[38]

(92) In addition to dispensing medicines, pharmacists provide advice on non-prescription medicines (OTC medicines). With respect to prescription medicines, pharmacists are obliged to dispense the medicines prescribed by the doctor, and therefore do not determine the medicine that is given to the patient. However, in some Member States, the pharmacist is allowed or even required by law to either substitute an originator medicine with a cheaper generic version (if available), or prescriptions are issued on the basis of molecule rather than product, in which case the pharmacist can or must select an appropriate generic product (if available) at the lowest price.

(93) The remuneration system for wholesalers and pharmacies in most European countries is based on a margin, regulated by the individual Member State and sometimes combined with a fixed element. Pharmacies typically have one or two principal full-line wholesalers offering a several times daily delivery service. The discount structures offered by the wholesaler reward those pharmacies that place a substantial volume of purchases with it, although in some Member States discounts are prohibited.

1.1.2.3. Parallel Traders

(94) Price differentials between Member States create the opportunity for arbitrage, i.e. the purchase of pharmaceutical products in low-price Member States and subsequent resale in high-price areas. It is from this price differential that parallel traders derive their profits.

(95) According to information received in the course of the sector inquiry the turnover of parallel traders is approximately € 3.5 billion - € 5 billion in Europe, which is between 2% and 3% of the overall market. There are approximately 100 companies engaged in parallel trade in the EU employing in total between 10,000 and 15,000 people. With few exceptions, parallel traders fall within the definition of SMEs.

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36 European Association of Hospital Pharmacists (EAHP).

37 In some Member States pharmacies located in hospitals can also dispense to out-patients.

38 The European Commission has currently a number of infringement proceedings open against the legislation on pharmacy ownership and establishment in Italy, Austria, Spain, France, Germany, Portugal and Bulgaria.

(96) Some studies[39] indicate direct and indirect savings in importing Member States as a result of parallel trade. Other studies[40] contest these savings or at least the level of savings achieved and point to other effects of parallel trade. As parallel trade is not the object of this sector inquiry, no further details are provided in this report.

1.1.3. The Demand Side

(97) The demand side of the pharmaceutical sector is rather unique. It is characterised by a complex interrelationship between amongst others patients, doctors, hospitals, insurance providers and reimbursement systems. For prescription medicines, the ultimate consumer (i.e. the patient) systematically differs from the decision maker (generally the prescribing doctor) and very often also from the bearer of the costs (generally the health system).[41] As a consequence, price sensitivity is rather limited for the decision makers and patients.

1.1.3.1. Doctors

(98) Unlike other markets, the patient is normally not in a position to choose directly which product he/she wishes to use. The relationship between patient and doctor is characterised by an information asymmetry where the patient generally must rely on the doctor's expertise. Doctors are therefore decisive for the choice of pharmaceutical products (type and volume). This explains why it is so important for originator companies to remain in constant contact with doctors. In addition to detailing (visiting of doctors by pharmaceutical companies), the respondent originator companies confirmed that medical journals and seminars are the main source of information for doctors on developments in relation to medicines.

(99) On average, the number of physicians (out-patient doctors) per 100,000 inhabitants in the EU has increased slightly during the last decade to over 300.[42] Nevertheless, there are significant differences between Member States (and also on the regional level, e.g. between urban and rural regions) regarding the density of physicians.

(100) The relationship between pharmaceutical companies and doctors is the subject of controversy, given the potential for a conflict of interest between the business objectives of the industry and the duty of the doctor to prescribe the most appropriate medicines. EU legislation lays down some conditions to limit offers of hospitality by

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39 For example, "The economic impact of parallel import of pharmaceuticals" (June 2006), University of Southern Denmark.

40 "The Economic Impact of Pharmaceutical Parallel Trade: A Stakeholder Analysis" (January 2004), London School of Economics.

41 The costs are mostly borne collectively by the citizens or the insured, financing with their contributions or taxes the public health systems.

42 WHO-HFA, 2007.

originator companies at sales promotion events, and to regulate the main purpose of the event and conduct of the health professionals.[43] In addition, EFPIA representing the originator companies and the Standing Committee of European Doctors (CPME) have concluded an agreement to avoid/limit potential abuses in promotional activities.[44]

1.1.3.2. Hospitals

(101) In the EU both public and private providers operate in the hospital sector. Typically hospitals buy directly from manufacturers and prices may be determined, as well as providers selected, via public tenders. At times medicines are also supplied by wholesalers. Suppliers have generally more freedom to decide the price of their medicines than when selling to the retail segment. According to a submission received in the sector inquiry, competition between originator and generic companies in the hospital segment can be strong, e.g. when an originator company believes that doctors will continue to prescribe a product if the patients receive it for treatment in the hospital.

Box: The Napp case investigated by the OFT[45]

In April 2001, the UK Office of Fair Trading (OFT) imposed a penalty of £ 3.2 million on Napp Pharmaceuticals (Napp), a Cambridge-based pharmaceutical company, for abuse of its dominant position in the market for the supply of sustained-release morphine tablets and capsules in the United Kingdom. Sustained-release morphine is commonly used in the treatment of cancer-related pain and Napp was found to have supplied its sustained-release morphine product, MST, to patients in community pharmacies at excessively high prices while supplying hospitals at discount levels with the effect of eliminating competition in the hospital market.

1.1.3.3. Patients

(102) Patients are the ultimate consumers of medicines. Per European citizen, on average over € 430 is spent on pharmaceutical products per year, obviously with significant differences over time and patients, mainly through public or third party funding.

(103) Since most prescription medicines are provided under public health (insurance) schemes, the overwhelming majority of European patients do not directly pay the price of the prescription medicines they receive. They may, however, make a direct

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43 Article 94 of Directive 2001/83/EC of 28.11.2004 on the Community code relating to medicinal products for human use as amended by Directive 2004/27/EC of the European Council and the Parliament of 31 March 2004 (OJ L311/67 p.67).

44 Joint Declaration of CPME and EFPIA on the Cooperation between the Medical Profession and the Pharmaceutical Industry – June 2005.

45 http://www.oft.gov.uk/shared_oft/ca98_public_register/decisions/napp.pdf

contribution to the price, for example in the form of a "co-payment" representing a fraction of the full price, or other forms such as a flat fee contribution. In some new Member States (Poland and the Baltic States) co-payment can be up to 50% while the World Health Organisation (WHO) considers that co-payment above 25% as a barrier to access to medicines.

1.1.3.4. Social Security/Health Insurers

(104) As just explained, patients do not pay directly the (full) costs of prescription medicines, and consequently health systems must organise the reimbursement to patients and/or distributors of relevant costs. This may be done through state agencies (for example, the National Health Service in the UK[46]) or through relatively autonomous social insurers, as in Germany[47]. However, there appears to be a trend for health insurers to directly negotiate prices and rebates with the manufacturers (see box in Chapter B.2.3.).

(105) The level of reimbursement is often the subject of controversy between health insurers and pharmaceutical companies. High co-payments can discourage certain patients from buying the pharmaceutical products concerned. In order to find a solution to controversial reimbursement decisions, Member States tend to delegate the cost benefit and assessment of medicines to independent experts such as the National Institute for Health and Clinical Excellence (NICE) in the UK and the Institute for Quality and Efficiency in Health Care (IQWIG) in Germany. These institutions assess medicinal products or treatments on two criteria: the effectiveness of a medicine in providing therapeutic benefits; and the effectiveness of a product or treatment in relation to its cost and alternative products, as a measure of the (relative) efficiency of the medicinal product or treatment.

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[46] Typically such systems are financed on the basis of taxes. Such systems are also referred to as "Beveridgean" named after William Henry Beveridge (1879-1963) who was responsible in 1942 for the report Social Insurance and Allied Services (known as the Beveridge Report), which outlined the conceptual basis of the British Welfare State after the war. In this report, Beveridge also produced a blueprint for the tax-financed National Health Service.

[47] Typically, such systems are based on contributory social insurance schemes, which are mainly financed through contributions relative to the income earned from employment. Such schemes are also referred to as Bismarckian systems after the German chancellor Bismarck who introduced public health care based on contributions by employers and employees.

Summary

The pharmaceutical sector is R&D driven and highly regulated. On the supply side, there are two types of companies. So-called "originator" companies are active in research, development, manufacturing, marketing and supply of innovative medicines. These are usually subject to patent protection, needed to provide a reward for innovation and incentives for future research. When patent protection expires, the originator companies lose their exclusive rights to manufacture and market these medicines and generic manufacturers can enter the market with medicines that are equivalent to the original medicines, but typically at significantly lower prices. This helps contain public health budgets, contributes to an increase in consumer welfare and creates incentives for further innovation.

Originator companies and R&D: During the period 2000 – 2007 originator companies spent on average 17% of their turnover from prescription medicines on R&D worldwide (approximately 1.5% of turnover was spent on basic research – research to identify potential new medicines, the rest mostly on (pre-)clinical trials and tests). Expenditure on marketing and promotional activities accounted for 23% of their turnover, thus about one third more than they spent on R&D as a whole. The inquiry confirms that a few "blockbuster" medicines (i.e. where annual global turnover for that medicine exceeds US$ 1 billion) account for a substantial part of the sales and profits of large originator companies. A number of blockbuster medicines have lost patent protection in recent years and more will do so in the coming years. Combined with other factors, this has given originator companies incentives to extend the period during which they enjoy blockbuster revenues.

Generic companies: Generic companies are in general smaller in size than originator companies and often more regional in nature. Large generic companies are active with a significant range of products. They generate a large part of their turnover from medicines equivalent to blockbuster products whose exclusivity has expired. Their activity in R&D is limited.

Demand for Pharmaceuticals: On the demand side, the pharmaceutical sector is unusual in that for prescription medicines, the ultimate consumer (the patient) is not the decision maker (generally the prescribing doctor and in certain Member States the pharmacist). Nor does the ultimate consumer usually directly bear the costs, as these are generally met by a national health scheme. Because of this unique structure, there is usually limited price sensitivity on the part of decision makers and patients.

1.2. Product Life Cycle

(106) In general terms, the life cycle of an originator product can be divided into three distinct phases: the pre-launch period, where R&D as well as regulatory (governmental) approval take place; the marketing and sales period, during which the product benefits from exclusivity; and a later period when the LoE occurs and generic competition is possible.

(107) In every phase, patent protection plays a crucial role in the business strategies of originator companies. Patent applications are filed from the very beginning of the discovery process for a new medicine and can continue to be filed throughout its entire life cycle. As shown in the previous section, the period between launch and LoE is the period during which originator companies must aim to recover the investments made in R&D (including those made for failed projects) and indeed show an overall return.

(108) In order to maximise the revenue streams from a given product (and in particular blockbuster medicines), originator companies put into place a variety of life cycle management strategies. These include not only patent and litigation strategies, but also other measures such as enhancing product loyalty or the introduction of product differentiation or OTC switches.

(109) This section provides an overview of the main aspects of these three phases of the product life cycle and the business strategies applied. More details, in particular concerning patent and life cycle strategies, are provided in subsequent chapters.

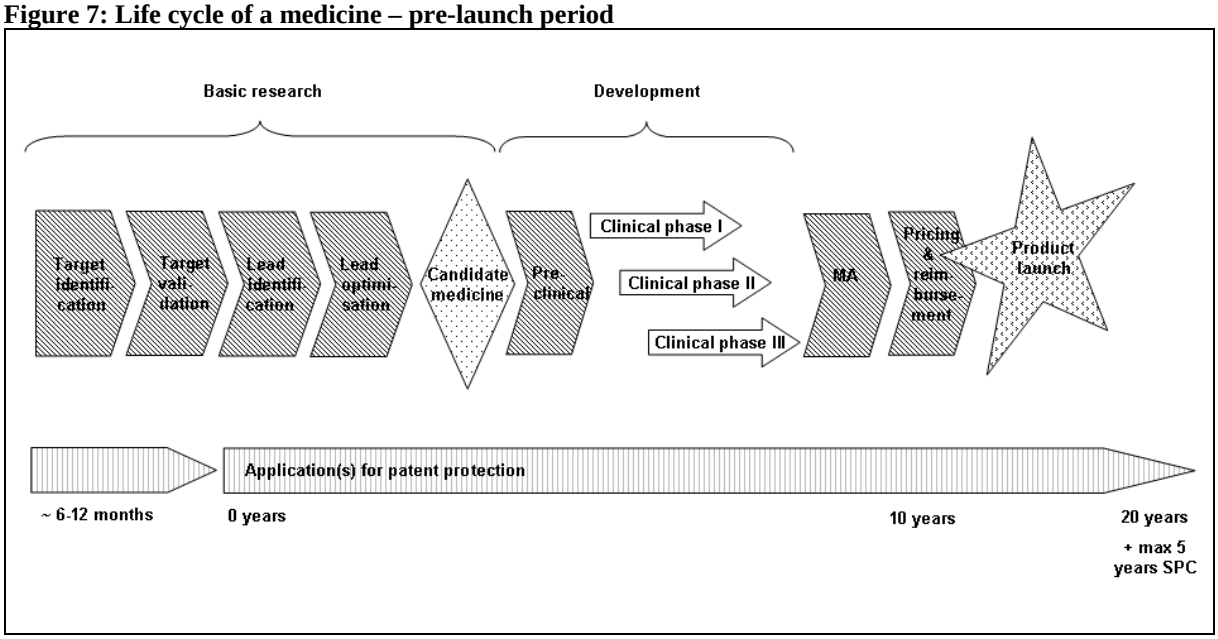
1.2.1. Pre-Launch Period

(110) Typically, R&D activities in the pharmaceutical industry produce a continuum of innovation which can be divided into two distinct categories. First, fundamental innovation, which leads to the discovery of new medicines containing novel pharmaceutically-active substances (NCEs). This type of innovation requires significant investment in research with no guarantee of commercial success. Secondly, incremental innovation results from the development of existing medicinal products. Incremental innovation may involve the development of a new formulation or mode of delivery, or the combination of previously disclosed active substances, or the use of a new salt or derivative of the original product. In this section, the focus is on fundamental innovation and the phases involved.

1.2.1.1. The Different R&D Phases

(111) The pre-launch period in the life cycle of a medicine comprises the initial discovery of a new molecule and its development as a new medicine up to marketing authorisation and any subsequent pricing and reimbursement decisions. Following their market launch, products continue to be monitored through the process of pharmacovigilance i.e. monitoring of possible adverse reactions and/or new side effects (also referred to as Phase IV studies). The figure below sets out these different steps along with average time frames and the corresponding patenting activity.

Figure 7: Life cycle of a medicine – pre-launch period



Source: Pharmaceutical Sector Inquiry

1.2.1.1.1. Basic Research

(112) The research process for a new medicine typically begins with scientists aiming to identify molecular targets (frequently enzymes or receptors) which are associated with the disease in question. This process is called target identification.

(113) Following target identification, scientists carry out tests to verify how the targets regulate the biological processes in the body and whether they are suitable as a target for a therapeutic agent. They also compare the performance of all potential targets for therapeutic action. This step is sometimes referred to as target validation.

(114) The next step is lead identification, whereby new molecules are actively sought which interact with the target(s) identified. This may involve mass screening of chemical libraries. This results in the identification of one or more molecules which show promise as potential treatments for the disease. Leads may also be derived from known treatments of disease, such as competitors' products or natural remedies. They may also result from a surprise discovery made in other pharmaceutical research programmes.

(115) Lead optimisation then aims to find molecules which have the greatest potential to be developed into a safe and effective medicine. The best compounds are studied for their therapeutic effects in both in vitro and animal studies. The resulting candidate medicines then progress to the development phase.

(116) At some point during the lead identification/optimisation process, a company will begin to consider filing a patent application. Initially, these applications will be concerned with the active molecules themselves. The applications, and the resulting patents, are often referred to as "primary patents" because they relate to the first patents for the active molecules. Later during the development phase further patent applications will be made for other aspects of these active molecules, such as different

dosage forms (e.g. tablets, capsules or solutions for injection) or for particular pharmaceutical formulations (mixtures of active agents and other substances which promote the activity of the medicine by, for example, enhancing absorption in the body). Such patents, or their applications, are often referred to as "secondary patents".

(117) To maintain its freedom to operate, it is essential for an originator company to ensure that its research options remain as open as possible, in particular with regard to further development of its own inventions. Filing for broad primary patents and using several secondary patents around an invention is therefore considered instrumental to achieving this goal. As will be shown in chapter C.3.1., companies can however also develop patent strategies that are mainly aimed at foreclosing particular R&D of a competitor.

1.2.1.1.2. Development

(118) The development phase assesses the safety (e.g. toxicity) and efficacy of the lead compounds mainly through laboratory (animal) testing. For the most promising candidates, human testing is undertaken at a later stage. Trials can generally be divided into two main stages: the pre-clinical stage (which involves laboratory and animal testing primarily aimed at ascertaining toxicity) and clinical trials where three distinct phases exist:

1. Phase I, which consists of studies on small groups of healthy human beings to determine safety and side-effects.

2. Phase II, which consists of studies on patients with the disease, who are often chronically or even terminally ill, to test the efficacy of the new medicine for the given indication. Parallel tests with placebo preparations, i.e. medicines devoid of the active compound, are often also carried out at this stage, to provide for a "control group". Also the development of novel pharmaceutical formulations and dosage forms may be necessary, which will result in the filing of further (secondary) patent applications.

3. Phase III, which involves long-term trials comprising large patient groups (very often thousands of patients with the illness to be treated). New therapeutic applications for the candidate medicine can sometimes be found at this stage, which result in further (secondary) patent applications.

(119) EU legislation provides harmonised measures aimed at guaranteeing good laboratory practice and the safety of animals and humans during pre-clinical and clinical testing.[48]

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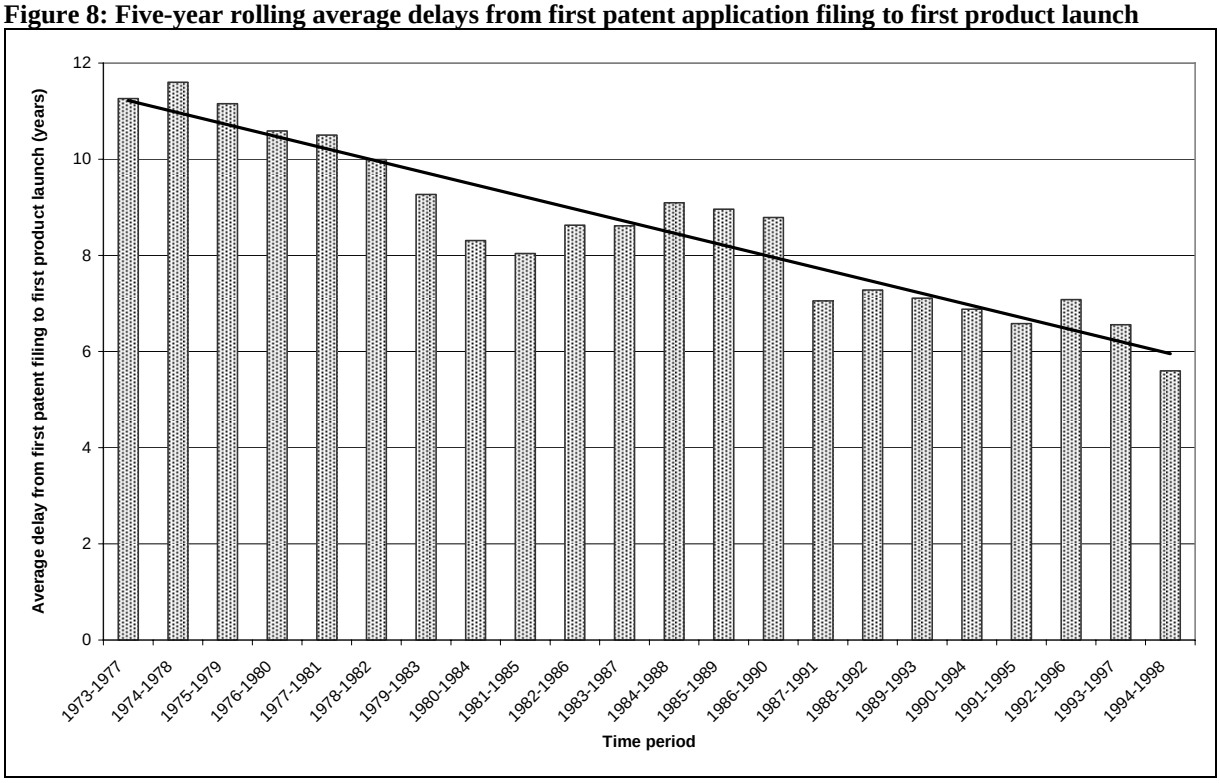
[48] See (1) Directive 2004/10/EC of the European Parliament and of the Council of 11 February 2004 on the harmonisation of laws, regulations and administrative provisions relating to the application of the principles of good laboratory practice and the verification of their applications for tests on chemical substances (OJL 121, 1.5.2001 p. 34-44). When submitting results, laboratories must certify that the tests were carried out in accordance with the principles of good laboratory practice. (2) Directive 2001/20/EC of the European Parliament and of the Council of 4 April 2001 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good

(120) The time between filing an application for the first compound patent to the launch of the product varies significantly, depending on the obstacles encountered. It can take between two to ten years for a potential medicine to go through the three clinical trial phases, with an average of five years.[49] On the basis of a sample of the 20 best-selling molecules the time period between first patent application and launch on the market seems to vary between six and ten years.

Figure 8: Five-year rolling average delays from first patent application filing to first product launch



Source: Pharmaceutical Sector Inquiry

(121) Using a wider sample of 141 INNs for which complete data was available,[50] the average time taken from patent application filing to product launch was 8.6 years. Figure 8 shows the five-year rolling averages of delays from first patent application filing to first product launch and demonstrates a reduction in these delays from 1973 to 1998. Nevertheless, it is fair to say that the period between first patent filing and first product launch is quite significant. As a reaction to these delays, mechanisms were introduced by the legislature to provide additional patent-like protection in the form of

clinical practice in the conduct of clinical trials on medicinal products for human use (OJ L 121, 1.5.2001, p. 34).

49 "Pharmaceutical Pricing Policies in a Global Market", OECD 2008

50 Data for combinations of INNs, as well as for INNs where the product launch was reported as having been prior to the filing of the first patent application, were excluded. The sample of 141 INNs nevertheless covers 77% of the INNs on the T-50 list and 69% of the INNs on the E-75 list. For an explanation of these lists, please see Annex on Methodology (Annexes to Chapter A).

SPCs and rules on data exclusivity. For further details on these mechanisms, see Chapters B.2.1. and B.2.2.

1.2.1.1.3. Marketing Authorisation

(122) Medicines may only be placed on the EU market when they are safe, effective and of good quality. This is verified in the marketing authorisation process. Marketing authorisations are governed by EC law and can be granted either centrally (after application to the European Medicines Agency, EMEA) or nationally. EU legislation also sets a time limit for taking marketing authorisation decisions. The centralised procedure lasts approximately two years. For further details reference is made to Chapter B.2.2., which summarises marketing authorisation procedures.

1.2.1.1.4. Pricing and Reimbursement

(123) In many EU Member States a product can only be marketed after a decision on the price and reimbursement has been taken. The pricing decision determines the "commercial" terms of access to the market in a particular country. The aim of these policies is to ensure on the one hand that patients have access to the necessary medicines and, on the other hand, that health budgets remain under control in order to ensure sustainability of the health system. Obviously these policies are also decisive in giving incentives for further innovation.[51]

(124) Even in Member States in which prices are not officially fixed, indirect price controls exist through reimbursement decisions. If no reimbursement is offered for an expensive product facing competition, or it is subject to a very significant co-payment, a significant share of patients will refrain from using the new medicines. When deciding on reimbursement, health insurers also rely on so-called "health technology assessments" aimed at assessing the added value of a new medicine over and above existing treatments as explained in Chapter B.1.1.

(125) Pricing and reimbursement decisions must be taken within the time frame set by the Transparency Directive (Directive 89/105/EEC[52]). However, many Member States appear to take considerably longer than the 90 days stipulated in this Directive for each of these decisions. Once the pricing and reimbursement decisions have been taken, the product can be launched onto the market. For further details on the regulatory framework for pricing and reimbursement decisions, see Chapter B.2.3.

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[51] It is interesting to note that the European Court of Justice in a recent judgment (Joined Cases C-468/06, C-469/06, C-470/06, C-471/06, C-472/06, C-473/06, C-474/06, C-475/06, C-476/06, C-477/06, C-478/06 Sot. Lélos kai Sia) has ruled that "*the control exercised by Member States over selling prices or the reimbursement of medicinal products does not entirely remove the prices of those products from the law of supply and demand*".

[52] Directive 89/105/EEC of the Council of 21 December 1998 relating to the transparency of measures regulating the process of medicinal products for human use and their inclusion in the scope of national insurance systems (OJ L 40, 11.2.19689, pp. 8-11)

1.2.1.1.5. Pharmacovigilance

(126) Throughout the lifetime of products, pharmaceutical companies are subject to harmonised requirements[53] to carry out pharmacovigilance studies in order to monitor adverse reactions to a medicine and/or new side effects (also referred to as Phase IV studies). As already mentioned above, further R&D (incremental innovation) aimed at improving the medicine or finding new uses is frequently conducted by originator companies during this phase. New patent applications can be therefore submitted at this stage.

1.2.1.2. Costs

(127) The costs of bringing a new medicine to market are subject to wide debate and a variety of estimations. The originator industry claims that the cost of a new medicine from basic research to launch amounts to between US$ 800 million and US$ 1 billion,[54] (this figure includes the costs of failed projects). Some respondents have suggested, however, that the costs are closer to US$ 450 million.[55] For biopharmaceuticals, the costs of R&D are generally reported to be higher than those of traditional pharmaceuticals.

(128) According to the submissions received by the respondent companies, pre-clinical and clinical trials are generally financed by the companies' own resources and the amount of financial support received from governments or other sources is not significant.

(129) However, it is worth noting that within the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), it was recently decided that support would be provided to European R&D activity through the Innovative Medicines Initiative Joint Undertaking (IMI JU). In this public-private partnership, the European Commission and EFPIA have joined forces to overcome bottlenecks in the development of innovative medicines. The Commission is contributing € 1 billion to the project, half of the IMI JU budget. The other half will be provided by the pharmaceutical industry through EFPIA.[56]

(130) On the basis of sector inquiry data, the development phase, in particular Phase III clinical trials, is the most expensive. In comparison, the costs associated with basic

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53 http://ec.europa.eu/enterprise/pharmaceuticals/eudralex/vol-9/pdf/vol9_10-2004.pdf.

54 At current exchange rates this would be the equivalent to € 552 million and € 690 million. See http://www.ecb.int/stats/exchange/eurofxref/html/index.en.html#data (18 September 2008).

55 At current exchange this would be the equivalent to € 310 million. See http://www.ecb.int/stats/exchange/eurofxref/html/index.en.html#data (18 September 2008).

56 Council Regulation (EC) No 73/2008 of 20 December 2007 setting up the joint undertaking for the implementation of the joint technology initiative on innovative medicines (OJ L 30, 4.2.2008, pp. 38-51).

research are low. This is a positive aspect for the companies as the risk of failure decreases with every step in the R&D process. The table below provides an average break-down of total costs invested by the originator companies in the different stages, as reported by the companies.

Table 7: Distribution of costs in clinical and pre-clinical phases at global level (2007)

Costs	In % of total R&D
Preclinical	8%
Phase I	12%
Phase II	20%
Phase III	60%

Source: Pharmaceutical Sector Inquiry

(131) In the course of the sector inquiry, companies were asked to indicate whether they carry out the R&D activities for new compounds themselves or whether the compounds that they currently have in their respective pipelines were acquired from third parties, e.g. through acquisition of the patent, through acquisition of the company owning the patent or through licensing agreements. The figures for the year 2007 are given in the following table:

Table 8: Percentages of molecules acquired or in-licensed by originator companies during pre-clinical research, clinical development or pending marketing authorisation (2007)

Phase	% Company's own molecules	% of molecules acquired or in-licensed
Pre-clinical research	88%	12%
Clinical development	75%	25%
MA pending	65%	35%

Source: Pharmaceutical Sector Inquiry

(132) The table suggests that originator companies rely, to a significant degree, on the acquisition of compounds from third parties. It is also evident that the degree to which originator companies rely on inventions by third parties rises with increasing proximity to product launch. Obviously, the table only provides a snapshot and does not allow to conclude whether originator companies are today more or less successful in innovating than in the past.

1.2.1.3. Selection Process

(133) Originator companies are commercial operators. They therefore determine the areas in which they carry out R&D activities from a commercial perspective, taking into account the costs and expected returns.

(134) In order to assist with this decision, all originator companies reported that they produce documents which they sometime refer to as target product profiles (TPPs). TPPs contain the indicators on which decisions concerning future product pipelines are based. The importance assigned to each indicator varies from company to company but the indicators listed below were reported to be of decisive influence for (almost) all companies:

- Therapeutic indication/area (ideally an unmet medical need);
- Market size and growth potential (patient numbers, medical needs, pharmaco-economic benefits);
- Risk assessment and profitability (economic return);
- Portfolio synergy (company experience, R&D and manufacturing facilities already available);
- Competitive environment (differentiation);
- Future regulatory environment (pricing-reimbursement); and
- IP protection (patents owned by both the company and their competitors).

(135) Taking into account these factors, the following therapeutic areas are currently the main targets of the originator companies questioned as part of the sector inquiry (presented in alphabetical order: no ranking whatsoever is implied):

Table 9: Main therapeutical areas in R&D

Alzheimers/ /mental health	Obesity
Cardiovascular	Oncology
Digestive conditions	Respiratory tract disease/asthma
Hepatitis	Rheumatoid arthritis
HIV/AIDS	Virus control/infections

Source: Pharmaceutical Sector Inquiry

(136) The areas highlighted above include the therapeutic areas addressed by the main blockbusters for 2007 listed in Chapter B.1.1., for example cardiovascular, respiratory system, nervous system, alimentary tract and metabolism.

(137) However, this leaves insufficient incentives to invest in R&D for rare illnesses, illnesses affecting specific segments of the population such as children or pregnant women or illnesses less present in the USA and the EU. Besides the collective financing of health care, market exclusivity and data protection have been used by the legislator as targeted incentives for companies to enter areas such as paediatric and orphan medicine.[57]

[57] Regulation (EC) No 141/2000 of the European Parliament and of the Council of 16 December 1999 on orphan medicinal products (OJ L 18, 22.1.2000 p. 1-5), Regulation (EC) No 1901/2006 of the European Parliament and of the Council of 12 December 2006 on medicinal products for paediatric use and

1.2.1.4. Success Rates

(138) The attrition rate (percentage of failed projects) is very high at the basic research stage, but this rate decreases throughout the development process. Costs, however, follow the opposite trend, the last phase in clinical trials (Phase III) being the most expensive one.

(139) According to industry figures, as few as 1 in 5,000-10,000 compounds tested are successfully launched.[58] In the course of the sector inquiry it was not possible to verify this data, as many companies claimed that they were unable to provide the requested information.

(140) The companies reported that the main reasons for discontinuing the development of a compound already under clinical trials are generally speaking of a scientific nature (often a lack of safety or efficacy). Once the project reaches the last phases of development, commercial reasons appear to play a less significant role in that decision. This is to be expected as commercial expectations are carefully considered by the companies at the outset.

1.2.2. Product Life Cycle during Patent Protection

(141) As explained in previous sections, it is the time period between launch and LoE during which an originator company must generate sufficient revenues from a product to cover the R&D expenses and earn a profit. After patent expiry, generic companies will be able to enter the market, leading to falling prices and decreasing volumes for the originator company.

(142) A significant number of blockbuster medicines will lose patent protection during the next few years. This fact, along with increasingly restrictive health care budgets throughout the EU, form the background against which originator companies aim to maximise their return on investment and reaping the benefits of prior R&D investments.

(143) In anticipation of the declining turnover following patent expiry, originator companies confirm employing strategies with broadly two aims: (1) extending the time of their market exclusivity without generic competition; and (2) maintaining or expanding the market that the product has during its exclusivity period.[59] These strategies are generally developed by life cycle management plans for specific products and markets.

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amending Regulation (EEC) No 1768/92, Directive 2001/20/EC, Directive 2001/83/EC and Regulation (EC) No 726/2004 (OJ L 378, 27.12.2006, pp. 1-19).

[58] EFPIA Submission to the European Commission in relation to the pharmaceutical sector inquiry, 13 June 2008 (p. 20).

[59] Originator companies also develop life cycle management strategies to face competition from other originator companies. These strategies include conventional business practices which are not specific to the pharmaceutical sector, such as cost savings for example through optimising the manufacturing process or product improvements.

Most of the companies consulted report having life cycle management departments. Life cycle strategies can be considered as a tool-box for originator companies to use in order to maximise the return from their products.

(144) In the subsequent parts of this report the most common life cycle management strategies will be described in detail. The main strategies that became apparent from the respondents are:

- Measures enhancing product loyalty (including criticising competitor's products); (Chapter C.2.5. and C.2.7.);
- Reformulation and second-generation launch; (Chapter C.2.7.);
- Putting into question the efficacy or quality of generic products; (Chapter C.2.5.);
- Creation of patent clusters (in particular through secondary patents protecting a product); (Chapters C.1.2., C.2.7.);
- Defensive patenting against other originators; (Chapter C.3.1.);
- Litigation against originator companies; (Chapter C.3.2.);
- Litigation against generic companies; (chapter B.1.3.);
- Settlements with generic companies; (chapter C.2.3.);
- Interventions at the level of marketing authorities and pricing and reimbursement bodies; (Chapter C.2.5.);
- Interventions at the level of other stakeholders (e.g. wholesalers and pharmacies); (Chapter C. 2.5.);
- Pricing strategies; (Annex to Chapter B);
- Launch of a licensed or a company's own generic (Annex to Chapter B);
- Switch to OTC (Annex to Chapter B).

(145) The Annex to Chapter B outlines those strategies not generally described in the other parts of the report, i.e. pricing strategies, launch of an own generic version and the switch to OTC. These strategies were less frequently reported by the respondent companies.

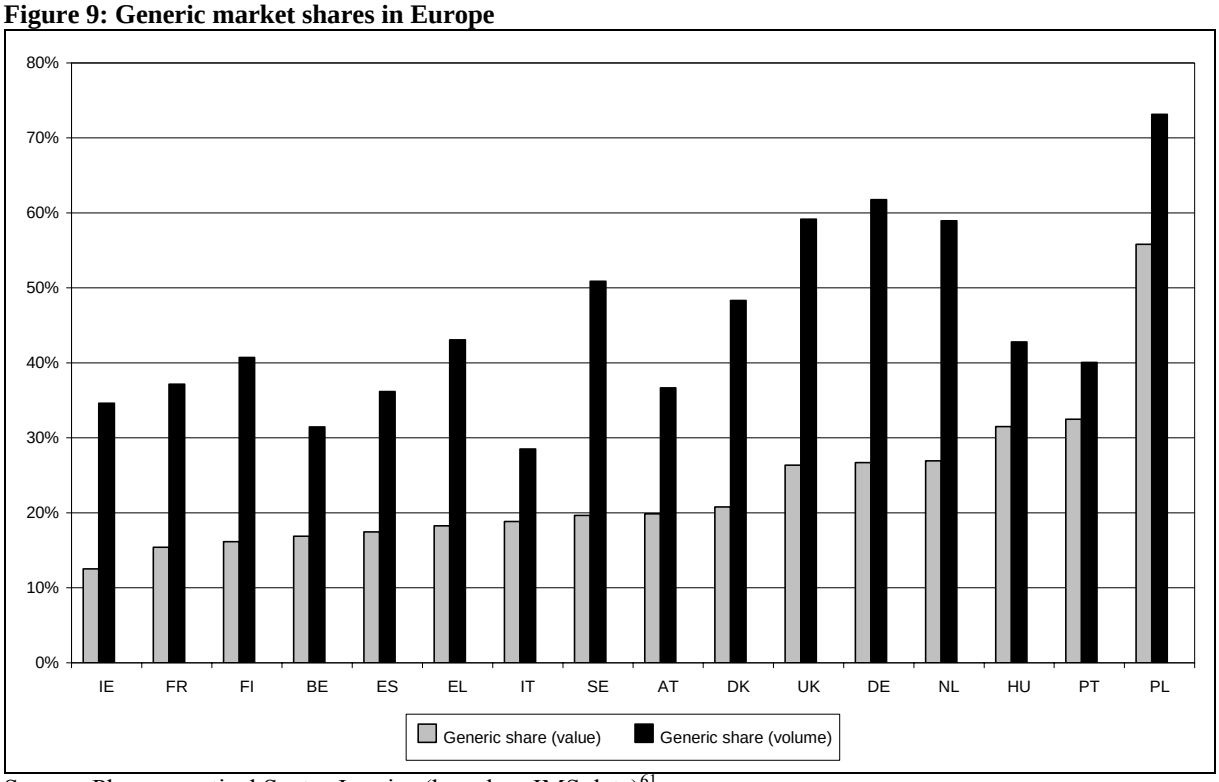
1.2.3. Product Life Cycle after Patent Expiration

(146) As will be shown in Chapter B.1.3., the launch of a generic version of a product following LoE has a major impact on the sales price and the volume of the medicine sold.

(147) The latest market figures on the generic medicines industry in Europe from July 2007 show that generic penetration varies widely between Member States. This ranges from less than 20% by value in Belgium, Finland, France, Greece, Ireland, Italy and Spain,

to between 20 and 40% in Austria, Denmark, Germany, the Netherlands, Portugal, Sweden, Hungary and the UK, and to over 40% in Poland.[60] The level of generic penetration in the EU is influenced by the different public policy choices made by the Member States.

Figure 9: Generic market shares in Europe



Source: Pharmaceutical Sector Inquiry (based on IMS data)[61]
Note: Generic market shares in Figure 9 may differ from findings by other sources, e.g. EGA, due to the fact that the definition of generic products may include different product categories in the various countries.

(148) However, despite the differences in generic market shares, all EU Member States nowadays encourage the penetration of generics medicines in an attempt to keep healthcare expenditure under control (for further details concerning policies encouraging generic penetration see Chapter B.2.3.).

60 These figures relate to all INNs in the market (irrespective of whether and when they went off-patent). As a result, the penetration rates may differ from those reported in the section B.1.3. which relate to the market shares obtained by generic companies within one and two years following loss of exclusivity for a selection of INNs that lost exclusivity in the reference period 2000-2007 (the E75 list).

61 The calculation of generic value and volume shares relates to the prescription retail market and is based on IMS' definition of generic products. Generic market shares for the remaining eleven Member States were not available.

Summary

There are three distinct phases to the life cycle of a new medicine: (1) R&D phase up to market launch; (2) the period between launch and loss of exclusivity (e.g. patent expiry); and (3) the period following the loss of exclusivity, when generic companies can enter the market.

During the first phase, companies identify potential new medicines and take them through intensive pre-clinical and clinical trials. The originator companies surveyed rely to a large degree (i.e. for more than one third of all new medicines in the marketing approval phase) on innovations acquired from third parties.

During the second phase, originator companies market the medicines they have developed, with a view to recouping upfront investments and making a profit. Effective patent protection is vital to sustain this business model, which also ensures there are incentives for further innovation.

Following loss of exclusivity, generic medicines can enter the market. The share of generic medicines varies significantly between Member States. In value terms the generic share is the highest in Poland (56%), Portugal and Hungary (both 32%) and lowest in Ireland (13%), France (15%) and Finland (16%).

1.3. Impact of Generic Entry

(149) This section addresses the impact of generic entry on the parts of the pharmaceutical sector that faced loss of exclusivity (i.e. expiry of patent protection, SPC protection and data exclusivity) in the period 2000 – 2007. The question of the impact of generic entry has two dimensions.

(150) First, there is the question of the extent of entry. Which part of the sector that faces loss of exclusivity is exposed to subsequent generic entry and in how many instances does generic entry occur? How quickly does it occur? How many generic entrants are typically observed?

(151) Second, in those instances where generic entry occurs, what is the effect? Notably, to what extent are the prices of the product that went off-patent affected? How are the volumes of the originator company affected? Are there any effects on other products (e.g. possible substitutes for the product that went off-patent)? The combination of the extent of entry and the effect of entry when it occurs determines the aggregate impact of entry on the sector facing loss of exclusivity.

(152) The analysis in this section is based on two main sources. First, it draws on data collected from pharmaceutical companies in the course of the sector inquiry.[62] Second, the Commission has used data obtained from IMS Health.[63] Consequently, in this section the dates of loss of exclusivity are those as reported by the (originator) companies themselves and, when these were not available, those provided by IMS Health. The section analyses the impact of generic entry in relation to these given dates. It does not necessarily identify any (additional) delays to generic entry that might arise from companies seeking to claim an extended exclusivity period in the context of life cycle strategies such as the ones described in Chapter C of this report.

(153) The analysis in Section 1.3 was based mainly on the "E75" list of INNs on which the Commission requested information from the companies. This list was the result of initial selection, in three Member States (France, Germany and the United Kingdom), of the 75 top-selling INNs that faced loss of protection in the period from 2000 – 2007.[64] The top 75 molecules in each of the three countries were then combined into a single list of molecules (the "E75" list) with a view to obtaining a robust sample of INNs likely to be representative of the EU as a whole. The resulting list comprised 128 INNs for which the Commission subsequently requested information from the

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62 Company data were gathered for the EU as a whole, except for price data, where the set of countries on which companies were requested to provide data was narrowed down to Denmark, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Spain and the United Kingdom.

63 For further details on the method see the Annexes to Chapter B.

64 For this initial selection, IMS sales and expiry data were used for France, Germany and the United Kingdom. In each country, the top 75 INNs accounted, in value terms, for well over 90% of sales of all INNs that faced loss of exclusivity in the period 2000-2007 in the Member State concerned.

companies in each of the 27 EU Member States. For a more general analysis of the sample of INNs and products on which the main issues of this report were investigated, see Chapter C.1.1.

(154) The analysis in this section at Member State level was based on those INNs on the E75 list that were relevant to the Member State in question, i.e. those INNs that were effectively sold in that Member State and which faced loss of exclusivity in the period 2000-2007. For further details on the methodology, see the Annexes to Chapter B.

1.3.1. Extent of Generic Entry

(155) Subsection 1.3.1.1 will analyse the number of instances where generic entry occurred after the INN faced loss of exclusivity.[65]. Subsection 1.3.1.2 analyses the time lag between loss of exclusivity and generic entry if and when it occurs. Finally, subsection 1.3.1.3 looks into the average number of generic entrants in the event of entry.

1.3.1.1. Occurrence of Entry

(156) Table 10 shows, for the EU as a whole[66], the share of INNs in the sample that faced generic entry over the period 2000 – 2007. All shares are presented both as a head count (where within each country each INN is counted as one; lefthand column) and in value terms (where within each country weights are given to the INN in relation to their sales value in the year before loss of exclusivity; righthand column).

Table 10: Share of INNs that faced generic entry following loss of exclusivity (EU average; sample: E75-list)

	Entry share (head count)	Value share entry
Entire sample; entire period	68%	86%
Measured one year after loss of exclusivity (entire sample)	50%	74%
Measured one year after loss of exclusivity (INNs expired in 2000-2006)	48%	74%
Measured two years after loss of exclusivity (INNs expired in 2000-2005)	57%	83%

Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(157) The first row in the table gives the occurrence of entry for the entire sample of 128 INNs on the E75-list, irrespective of when in the period the INN lost exclusivity or generic entry took place. As can be seen, the share of INNs in the overall sample that

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65 Whenever this section refers to an INN losing exclusivity, it means the first time that one of the formulations sold under the INN loses exclusivity.

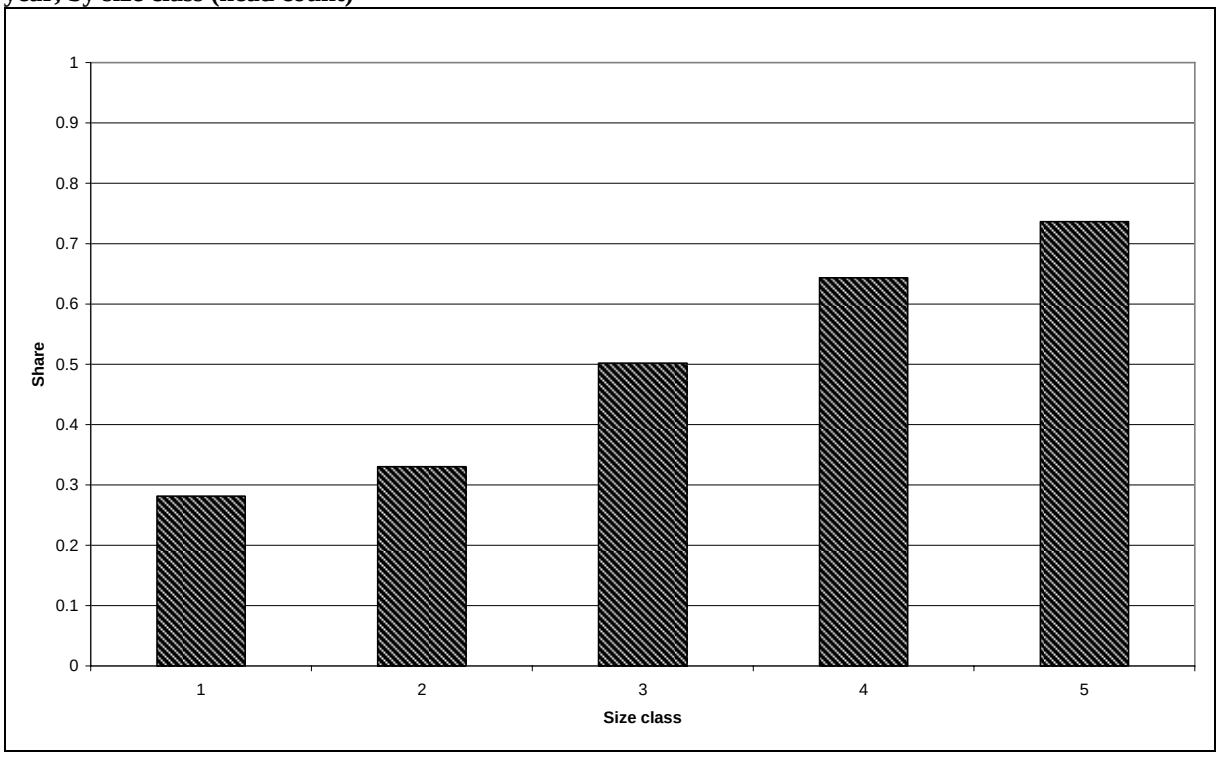
66 All EU averages in this section are calculated taking into account the relative weight of the individual Member States (as measured by sales of the relevant INNs in the Member State concerned, either in the year prior to expiry (for establishing shares of generic entry, average time to entry and generic penetration) or in the year 2007 (for the indices that track the development of prices or volumes over longer time periods).

faced generic entry at any point in time over the period 2000 – 2007 is about 68% in number terms and about 86% in value terms.

(158) These shares may be somewhat difficult to interpret, however, in that not all INNs are in an equal position. For instance, if those INNs lost exclusivity early in the period 2000 – 2007, that left a long time for entry to occur within the period under investigation. By contrast, for INNs which lost exclusivity late in the period (e.g. in autumn of 2007), little time is left for entry to occur and – even if they were relatively quick – instances of genetic entry might not be counted for these INNs. For this reason, the table also indicates the shares of INNs for which entry took place within one year, both for the entire sample (second row, mainly for comparison) and the sample which lost exclusivity up to 2006 (third row). It also indicates for this sample, the shares of INNs for which entry took place within two years (for loss of exclusivity up to 2005).

(159) The table shows that, focusing on patents which expired between 2000 and 2006 followed by entry within one year, the share of INNs that faced generic entry is about 48%. However, taking into account the importance of the INNs (in terms of sales), the entry share is higher, at 74%.

Figure 10: Share of INNs which expired between 2000 and 2006, followed by generic entry within one year, by size class (head count)



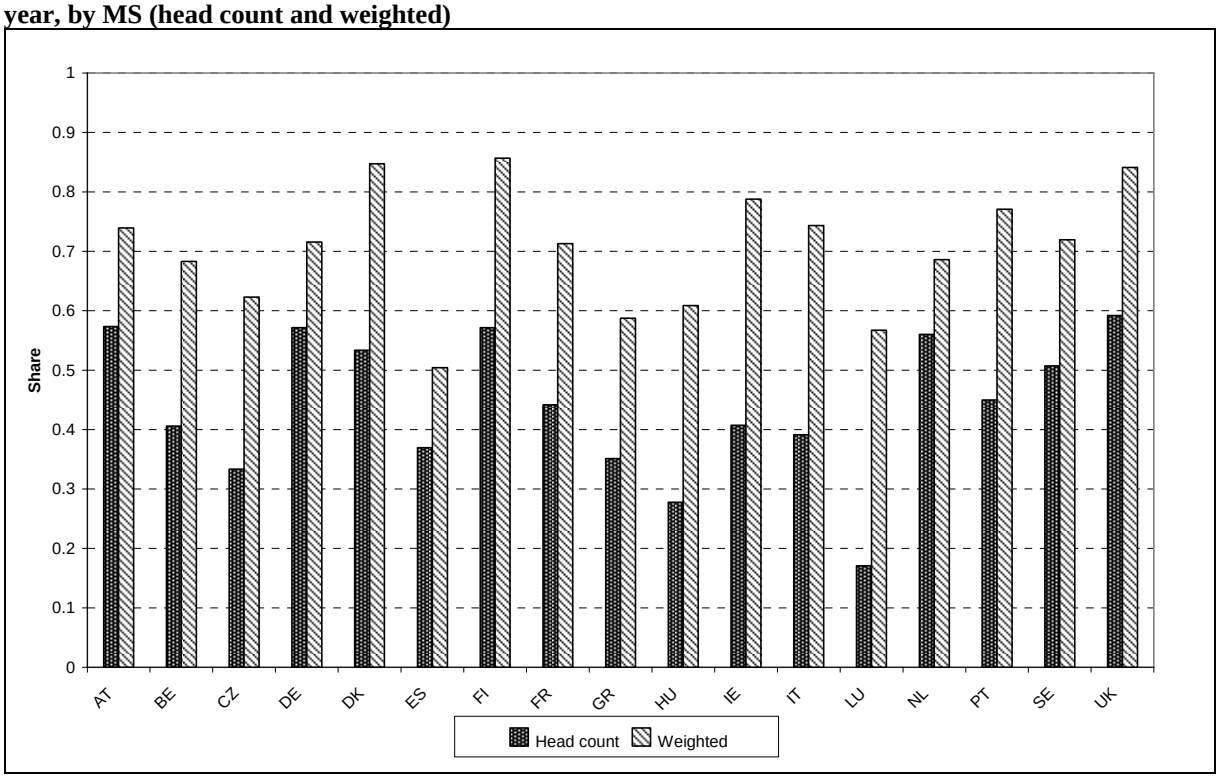
Source: Pharmaceutical Sector Inquiry (partially based on IMS data). Class 1 contains the 20% of the smallest INNs (in terms of sales value), class 2 the next smallest 20%, etc. Class 5 contains the 20% of largest-selling INNs.

(160) This last finding suggests that generic entry tends to concentrate especially on INNs with a high sales value. This pattern can also be seen to some extent in Figure 10, which sets out the share of generic entry for individual size classes. The set of INNs is split into five size classes, with class 1 containing the 20% of smallest INNs (in terms of their sales value in the year prior to expiry), class 2 the next smallest 20%, etc. Class

5 therefore contains the 20% of largest-selling INNs. On average, the share of generic entry appears higher for the larger size classes than for the smaller ones.

(161) The EU averages indicated above hide considerable variation between the EU Member States. Figure 11 provides an overview of the share of entry in a range of countries, both as a head count of INNs and with the INNs weighted by value. The figure shows that in the sample investigated, generic entry is most pervasive in Germany, Denmark, Austria, the Netherlands, Finland, Sweden and the UK, with entry shares above 50% both in number and value terms.

Figure 11: Share of INNs which expired between 2000 and 2006, followed by generic entry within one year, by MS (head count and weighted)

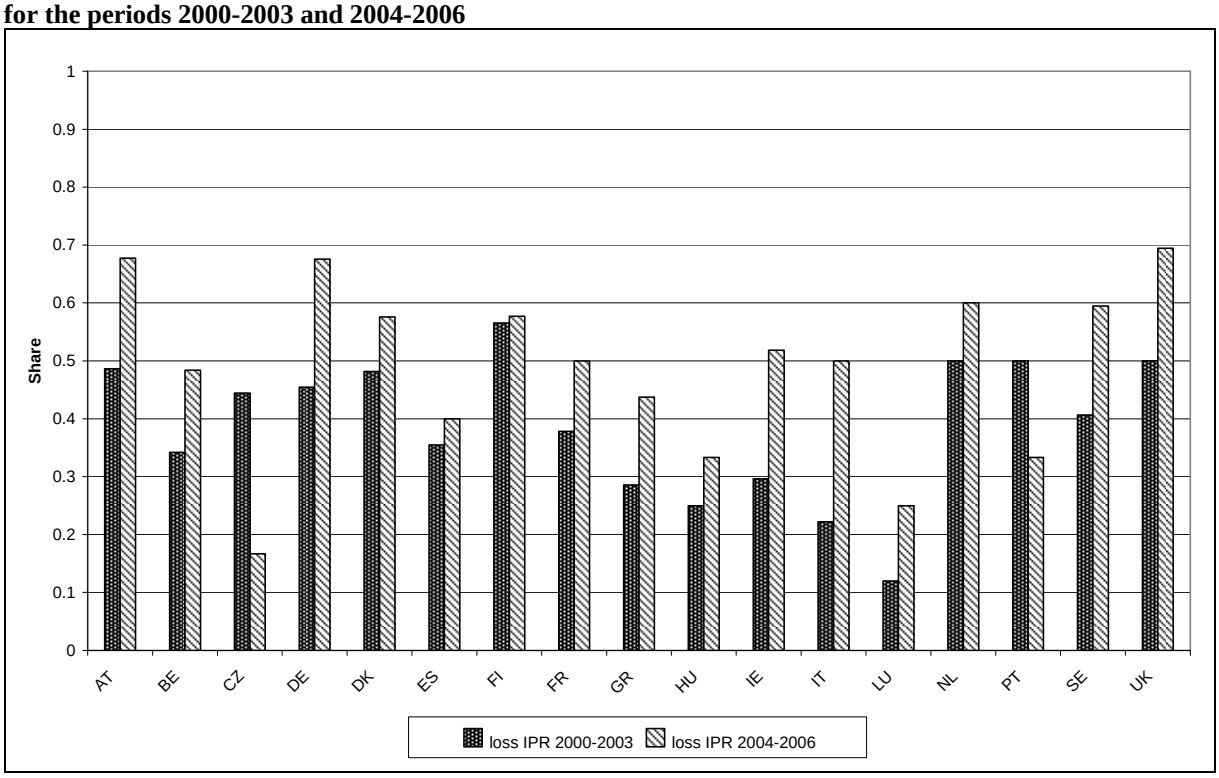


Source: Pharmaceutical Sector Inquiry (partially based on IMS data). Statistics for other countries not available (cf. Annex: Methodology)

(162) Another interesting question is whether the generic entry has changed over the period in question. Figure 12 presents the share of INNs that faced generic entry for a number of countries, drawing a distinction between INNs which expired in the period 2000-2003 and in the period 2004-2006.

(163) In most countries the share of expiring INNs followed by generic entry within one year has increased somewhat over the period 2000 – 2007, although there are some exceptions.

Figure 12: Share of INNs which expired followed by generic entry within one year, by MS (head count), for the periods 2000-2003 and 2004-2006



Source: Pharmaceutical Sector Inquiry (partially based on IMS data).

1.3.1.2. Time to Entry

(164) One important dimension of the entry process is the speed with which it takes place. Table 11 provides an overview of the average gap between the time when the INN in question lost exclusivity and the first generic entry into that INN (hereinafter referred to as "time to entry"). The average time to entry is presented both as a head count (within each country each INN in counted as one; lefthand column) and within each country weighting the INN in relation to their sales levels in the year before loss of exclusivity (righthand column).

Table 11: Average time to entry following loss of exclusivity (in months; EU average; sample: E75-list; expiries in 2000-2006); INNs facing entry

	Time to entry (head count)	**Time to entry (with INNs weighted by value)**
Time to entry (sample: E75)	11.9	6.6

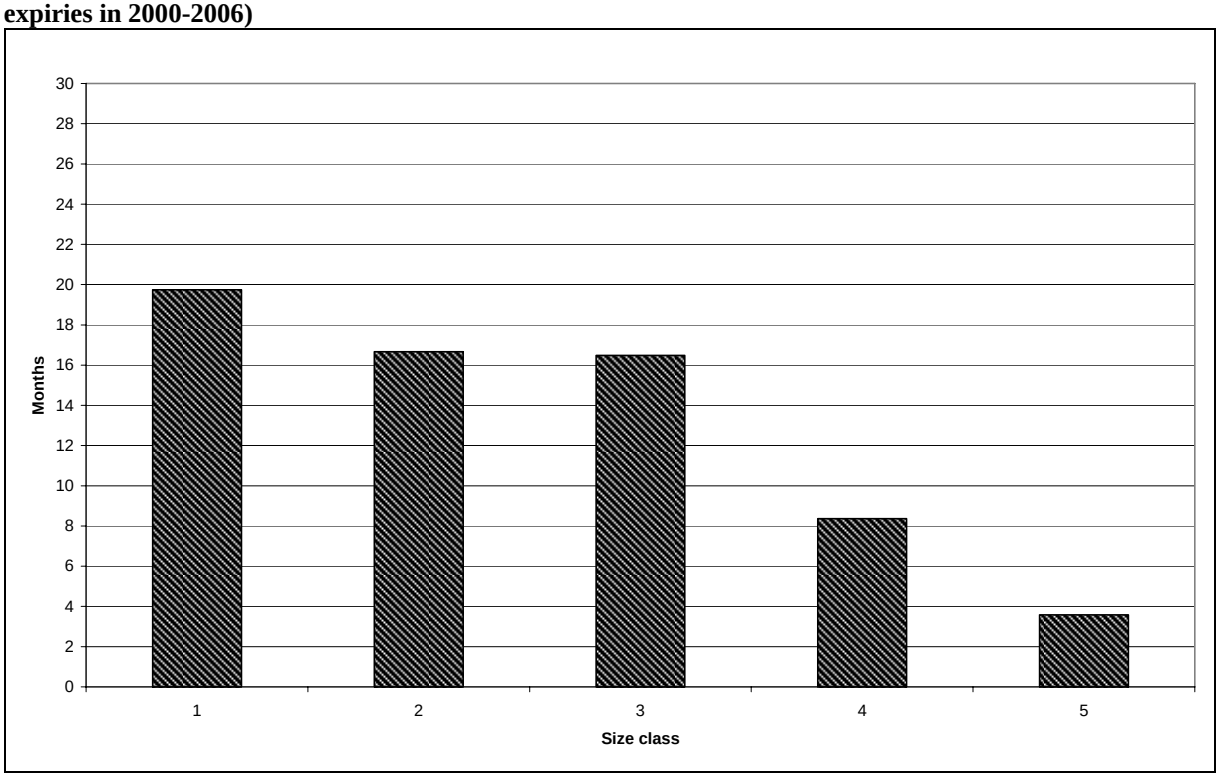
Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(165) The average time to entry is about 12 months in absolute terms, whereas it is about seven months in weighted value terms.[67]

[67] When calculating the average time to entry on a collection of expiring INNs, one needs to bear in mind that not all INNs are in an equal position (See also Subsection 1.3.1.1). For instance, for all INNs that expired towards the end of the period 2000-2007 and for which we observed entry, the time to entry is

(166) The table suggests that it takes less time for high value products to be faced with generic entry. This finding is not surprising considering that top selling INNs are normally also the most attractive to enter. The conclusion is further confirmed by the figure below setting out the time to entry for individual size classes. The set of INNs is split up into five size classes, where class 1 contains the 20% of smallest INNs (in terms of sales value in the year prior to expiry), class 2 the next smallest 20%, etc. By and large, the average time to entry appears to be smaller for the larger INNs (as measured by sales in the year prior to expiry). However, even for the top selling category it still took about four months on a weighted average basis before entry took place. In individual cases in this category, the time to entry ranged from 0 months (no delay) to over 50 months.

Figure 13: Average time to entry following loss of exclusivity, by size class (EU average); sample: E75-list; expiries in 2000-2006)

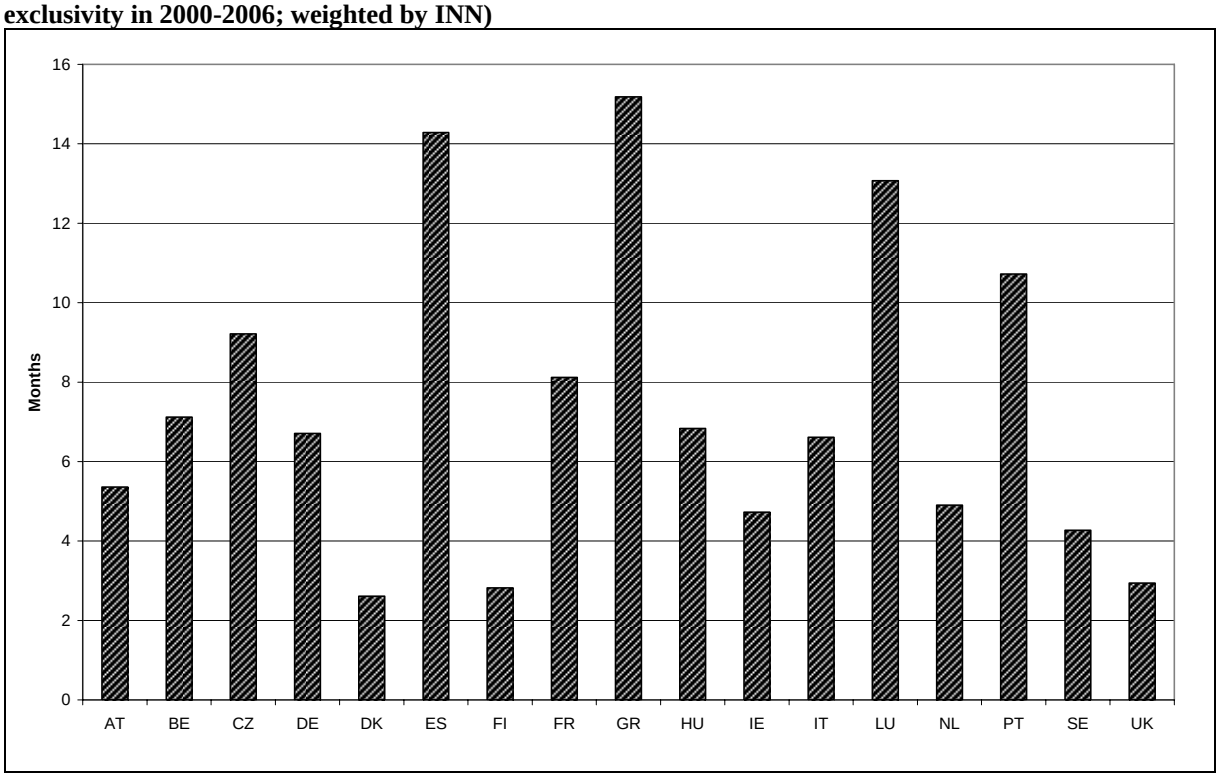


Source: Pharmaceutical Sector Inquiry (partially based on IMS data). Class 1 contains the 20% of smallest INNs (in terms of EU sales value), class 2 the next smallest 20%, etc. Class 5 contains the 20% largest selling INNs.

(167) There are equally considerable differences in time to entry between the EU Member States. Figure 14 shows the average time to entry in a range of countries. It is relatively short in Austria, Denmark, Finland, Ireland, the Netherlands, Sweden and the UK but exceeds half a year, on average in Belgium, the Czech Republic, Germany, Spain, France, Greece, Hungary, Italy, Luxemburg, and Portugal.

necessarily short. Taking these observations into account would not give a representative estimate (a biased estimate) of the average time to entry of the sample of INNs under investigation. For this reason, the period of expiries is again restricted to 2000-2006.

Figure 14: Average time to entry following loss of exclusivity, by country (sample: E75 list; loss of exclusivity in 2000-2006; weighted by INN)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data).

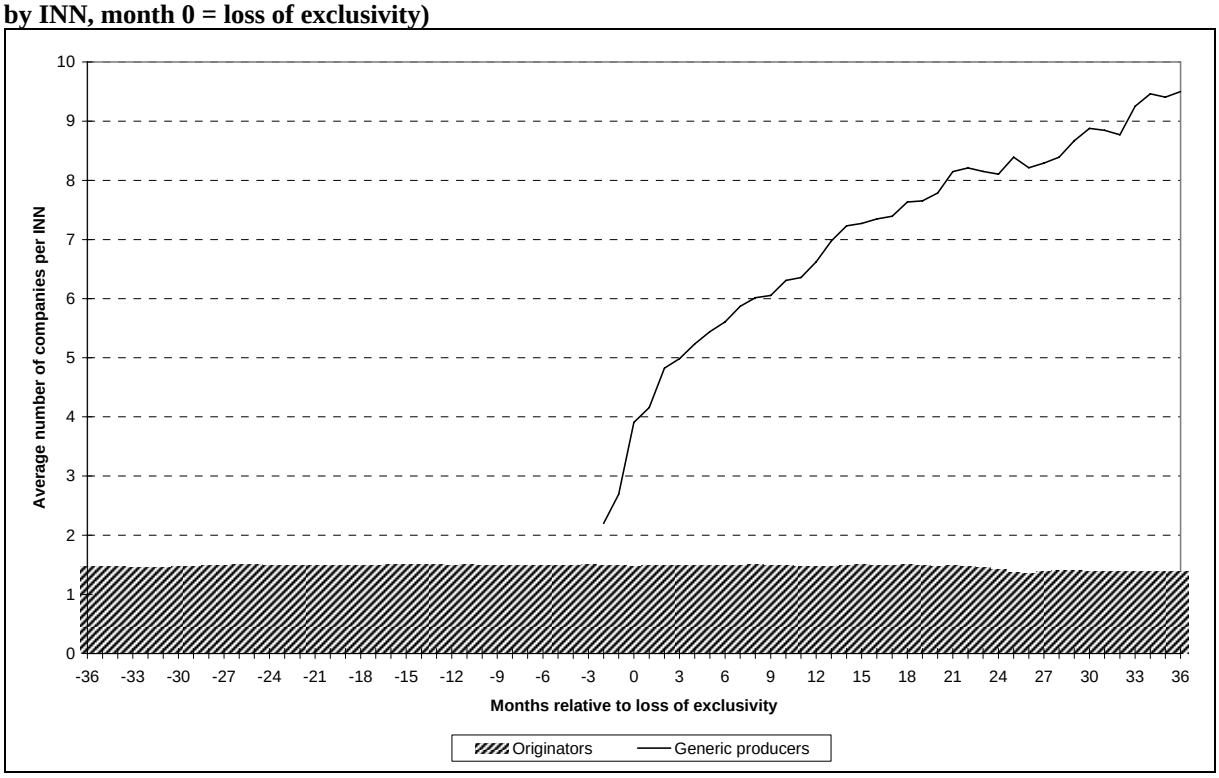
(168) Over the period, there appears to be a gradual decline in the time to entry for expiring INNs. It is, however, difficult to provide meaningful statistics in this respect, given that the choice of time horizon (the time one allows for expiry to take place) heavily influences any resulting statistic.[68]

1.3.1.3. Number of Generic Entrants

(169) The third aspect of the extent of entry is the number of generic companies that enter if and when entry takes place. Figure 15 charts the trend in the number of companies active per INN over time.

[68] For further details see also footnote 67.

Figure 15: Number of companies active per INN per MS (sample: E75 list; all instances of entry; weighted by INN, month 0 = loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(170) Before entry, the average number of companies per INN per Member State remains stable at about 1.5, normally comprising the originator firm itself and/or the companies which have obtained a licence to produce and sell the INN concerned.[69]

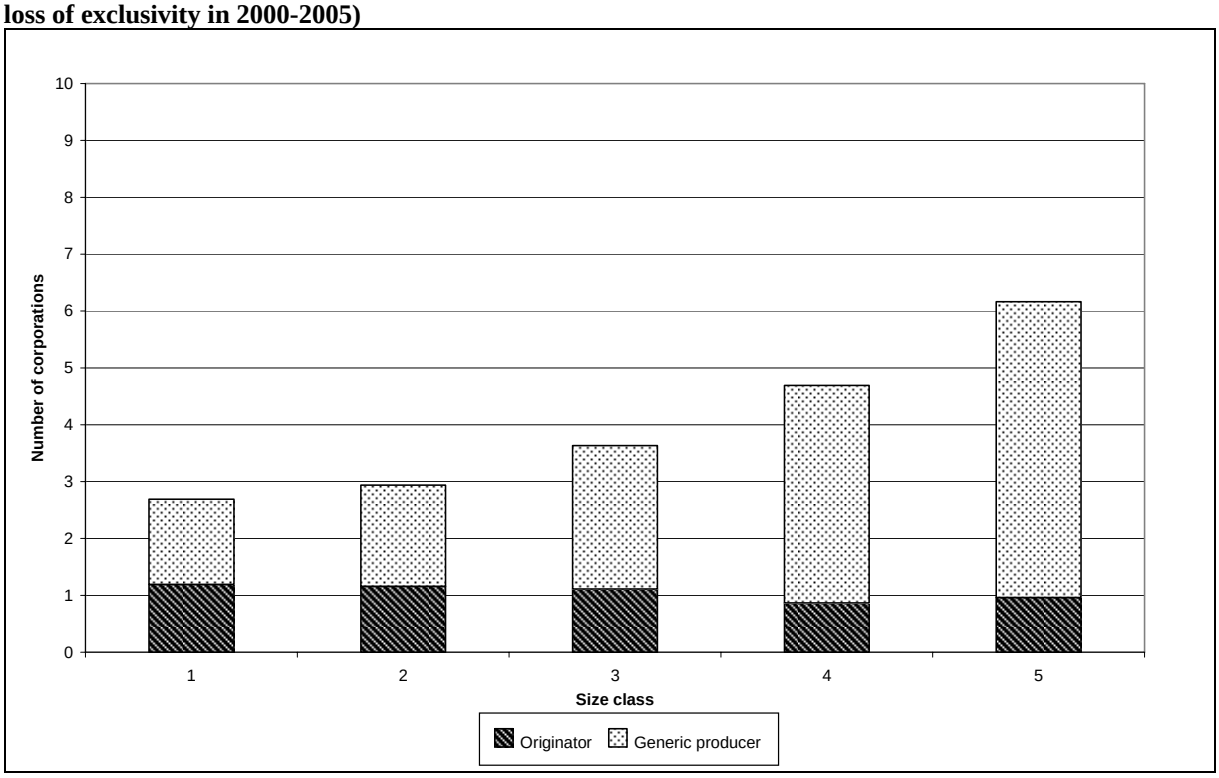
(171) One thing which is clear from the figure above is that the loss of exclusivity leads to a considerable increase in the number of companies selling products incorporating the INN concerned. On average, after one year following the loss of exclusivity, about four to five generic companies appear to be present in the market. Within three years following the loss of exclusivity the ratio of generic companies to originators is about 6:1.

(172) As with the share of INNs that faces generic entry following loss of exclusivity, the number of generic firms entering also increases as a function of the value of the market as measured by the sales of the INN in question. This is borne out by Figure 16.

(173) There is also quite some variation when it comes to the number of companies active per INN across the various Member States. This is visible in Figure 17.

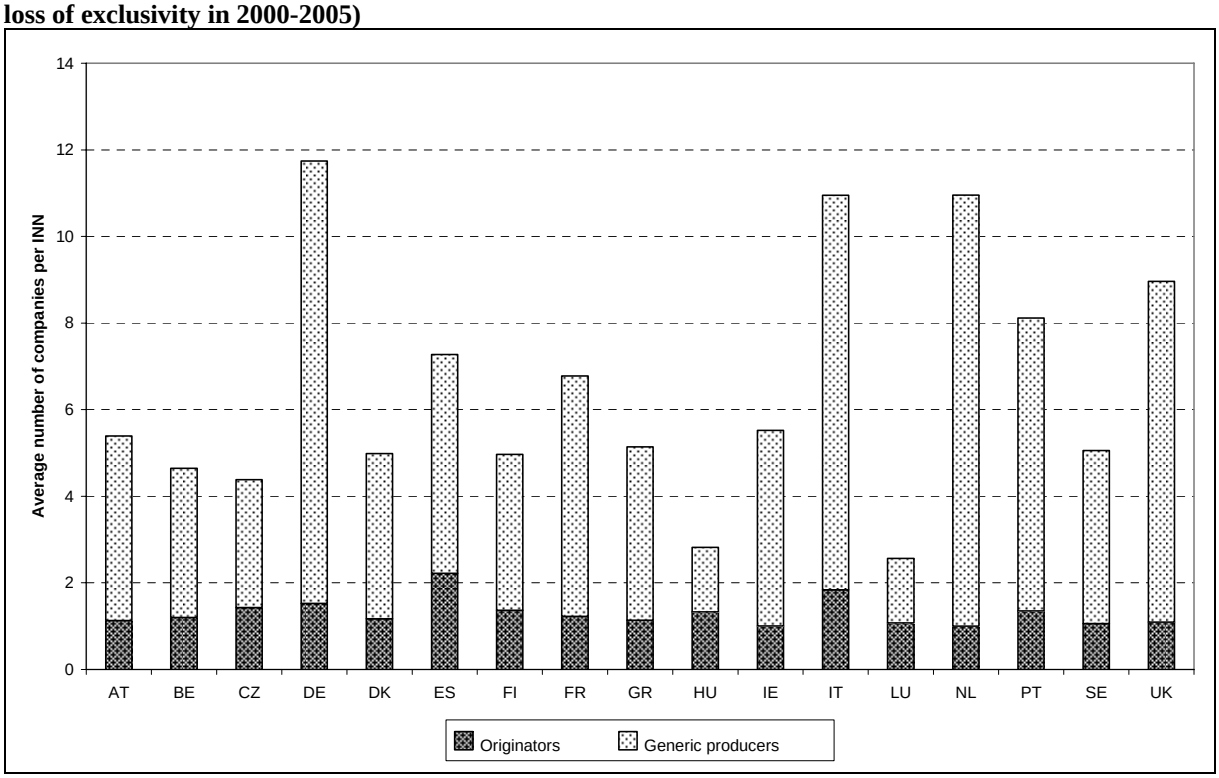
[69] A small proportion of "other" companies can also be observed prior to the loss of exclusivity. These may relate to INNs for which the company status had not been fully established or recorded in the IMS dataset, but also to possible "early" entries by generic firms, i.e. entries before the date of loss of exclusivity.

Figure 16: Number of companies active per INN per MS within two years, per size class (sample: E75 list; loss of exclusivity in 2000-2005)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data). Class 1 contains the 20% of smallest INNs (in terms of EU sales value), class 2 the next smallest 20%, etc. Class 5 contains the 20% top selling INNs.

Figure 17: Number of companies active per INN per MS within two years, per size class (sample: E75 list; loss of exclusivity in 2000-2005)

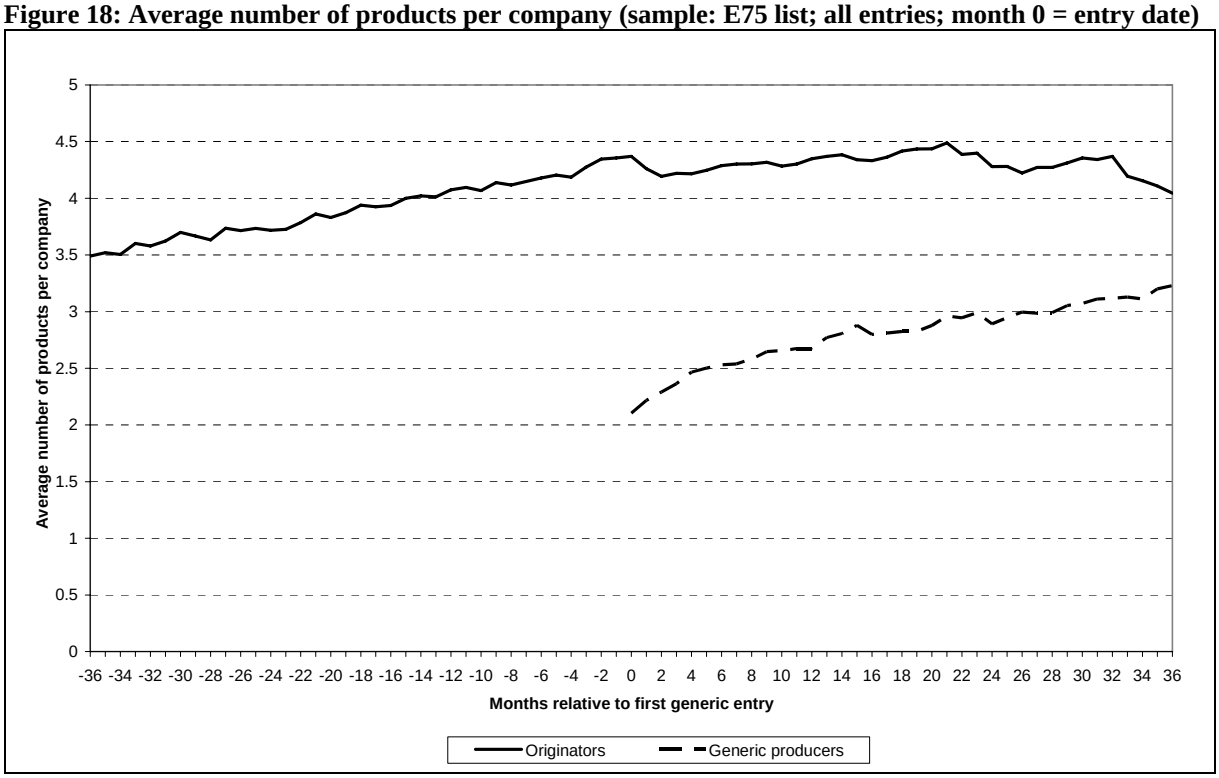


Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(174) It is striking to see that in the pharmaceuticals markets of Germany, the Netherlands, Portugal, Spain and Italy a high number of generic producers is present in the market. The generic segment of the pharmaceuticals market in these countries appears therefore very fragmented.

(175) Another interesting aspect is the number of formulations which generic companies enter with when they enter. The figure below plots the average number of formulations generic companies sell over time alongside, the same average for originator companies for the purpose of comparison[70].

Figure 18: Average number of products per company (sample: E75 list; all entries; month 0 = entry date)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(176) Generic companies generally appear to enter with about 2 to 2.5 products (formulations) per INN (EU average). This is smaller than the number of products with which originator companies are typically active (about 3.5 to 4). There are two main explanations for this. First, if and when a generic company enters a certain INN, it makes sense to focus on the commercially most attractive formulations, and to leave aside formulations that sell less (e.g. niche products). Second, typically, while the INN loses exclusivity insofar as the first formulation loses exclusivity, there are still other formulations that remain exclusive and that only the originator firm or its licensees can sell.

[70] In the calculation of this number, each single formulation (for instance, a tablet of a certain strength) is counted as one, regardless of whether or not it is sold under more than one brand name.

1.3.2. Effects of Generic Entry

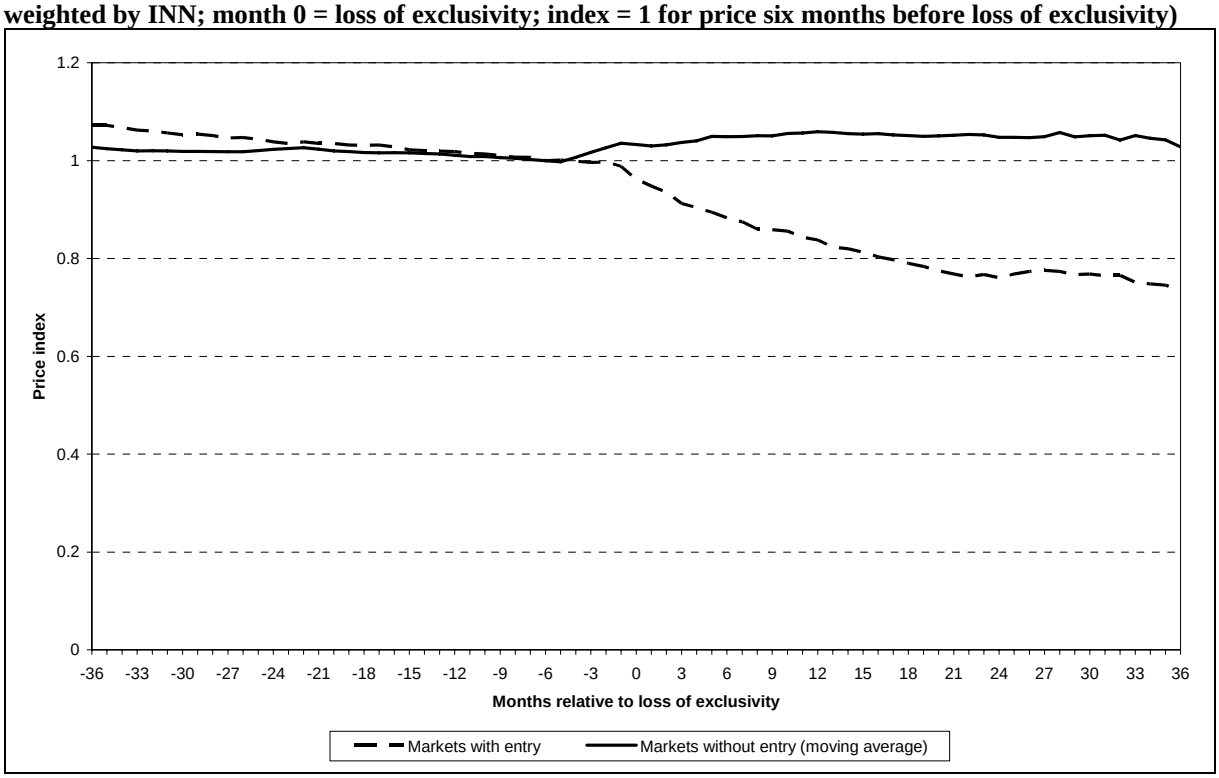
(177) Generic entry into a pharmaceuticals market can have a profound effect as it changes the market from one in which only one firm could sell the product(s) concerned (possibly via licensees) into one where more sources of supply become available for the product. The most direct effect is likely to be on the average price level of the product(s) concerned and the sales volumes of the originator. But other products can also be affected, both products under the INN that remain patent-protected and products based on other INNs but competing with the product(s) that lost exclusivity.

(178) This section first looks into the effects on prices for the INN concerned. It then turns to the effects on volumes, both the total volume of products sold and the volume sold by originators and generics respectively. Finally, it addresses, for a limited number of INNs, the effects of generic entry on possible substitute for the product that lost exclusivity.

1.3.2.1. Effects on Prices

(179) The first measure considered is the average price of the products sold under the INN. This average price is constructed as an index, which is set at one shortly (six months) prior to the end of the exclusivity period. Figure 19 plots the development over time of the average price index separately for expiring INNs with generic entry and without generic entry.

Figure 19: Development of average price index for INNs with and without generic entry (sample: E75 list; weighted by INN; month 0 = loss of exclusivity; index = 1 for price six months before loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

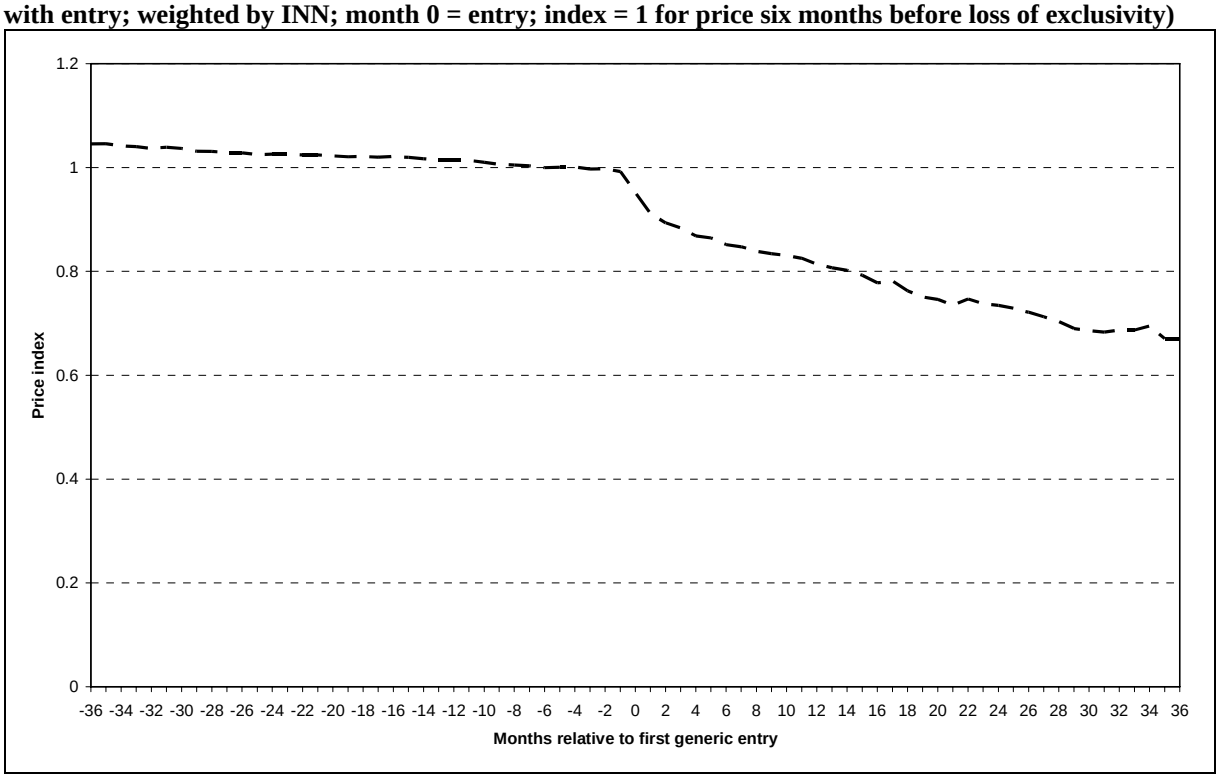
(180) Comparison of the two lines clearly shows that the average price index drops considerably on markets with generic entry, but not on markets without. In markets

with entry, average prices dropped by almost 20% after the first year following loss of exclusivity and about 25% after two years. In rare cases, for some medicines in some Member States, the decrease in the average price index was as high as 80-90%.

(181) Of course, it must be borne in mind that entry will not take place immediately on loss of exclusivity for every INN (as described in Chapter 1.3.1). The gradual drop in levels observed in Figure 19 is therefore the result of the combination of average price levels coming down quickly in those markets, where entry took place quickly and average price levels coming down later because entry took longer.

(182) A different picture emerges when not the date at which the INNs lost exclusivity, but the date of first generic entry is taken as the reference point. The resulting price development is illustrated in Figure 20.

Figure 20: Development of average price index for INNs with generic entry (sample: E75 list; all INNs with entry; weighted by INN; month 0 = entry; index = 1 for price six months before loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

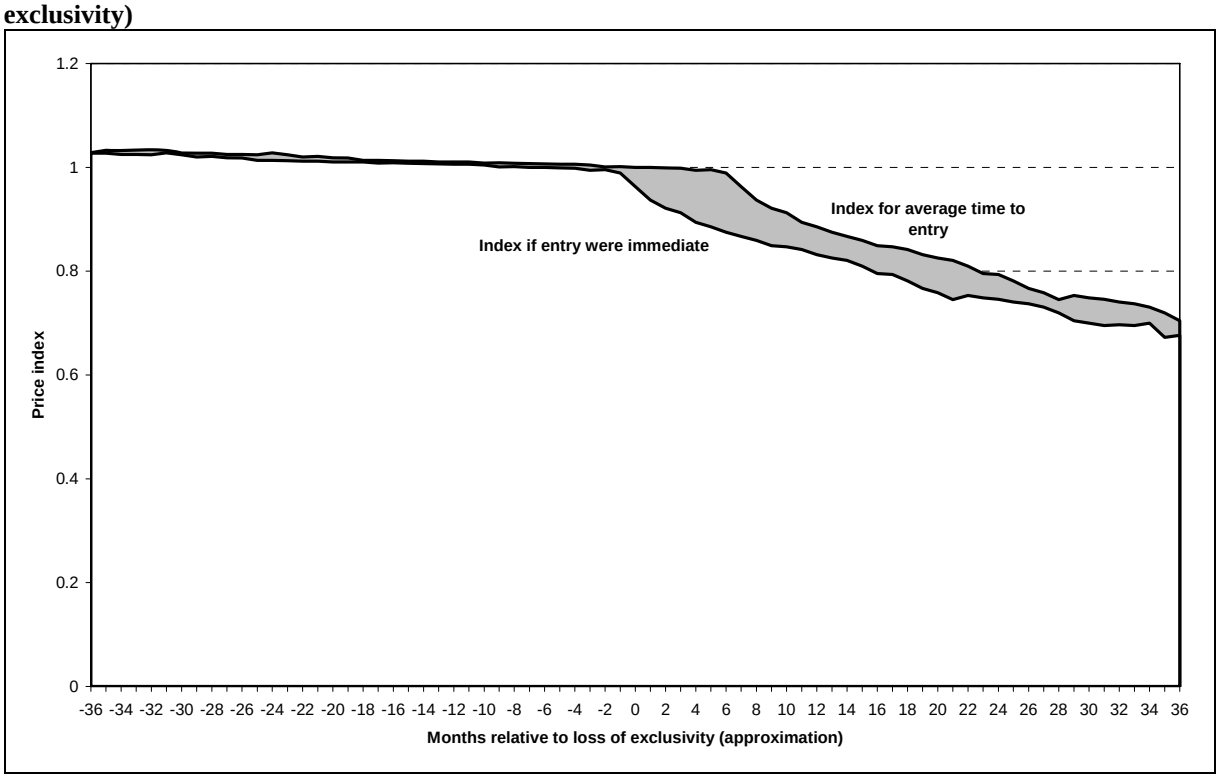
(183) Taking the date of entry as the reference point, the decreases in average prices emerge a little more clearly. The difference can be observed in the form of a somewhat sharper average price decrease in the month of entry, with the differences between the two graphs diminishing after one year.

(184) Figure 20 can also be used to obtain an impression of the additional savings that might have accrued to health systems in the period 2000-2007 if entry following loss of exclusivity had been immediate, rather than occurring with a delay.[71] In Subsection

[71] The sample is again restricted to INNs expiring in the period 2000 – 2006. See footnote 67.

B.1.3.1.2. above, it was observed that the average time to entry in the sample of INNs under consideration was about seven months (weighted average). Figure 21 presents two lines, both depicting a development of the average price index following first generic entry. The two lines have identical shapes, the only difference is that the line on the left ("Index if entry were immediate") assumes that for all INNs in the sample the first generic company enters at the time the INN lost exclusivity, whereas the line on the right ("Index for average time to entry") assumes that all INNs faced first generic entry only after seven months following loss of exclusivity.

Figure 21: Development of average price indices if entry were immediate and for generic entry after seven months following loss of exclusivity (approximation; sample: E75 list; expiries in 2000 – 2006; all INNs with entry; weighted by INN; month 0 = loss of exclusivity; index = 1 for price six months before loss of exclusivity)



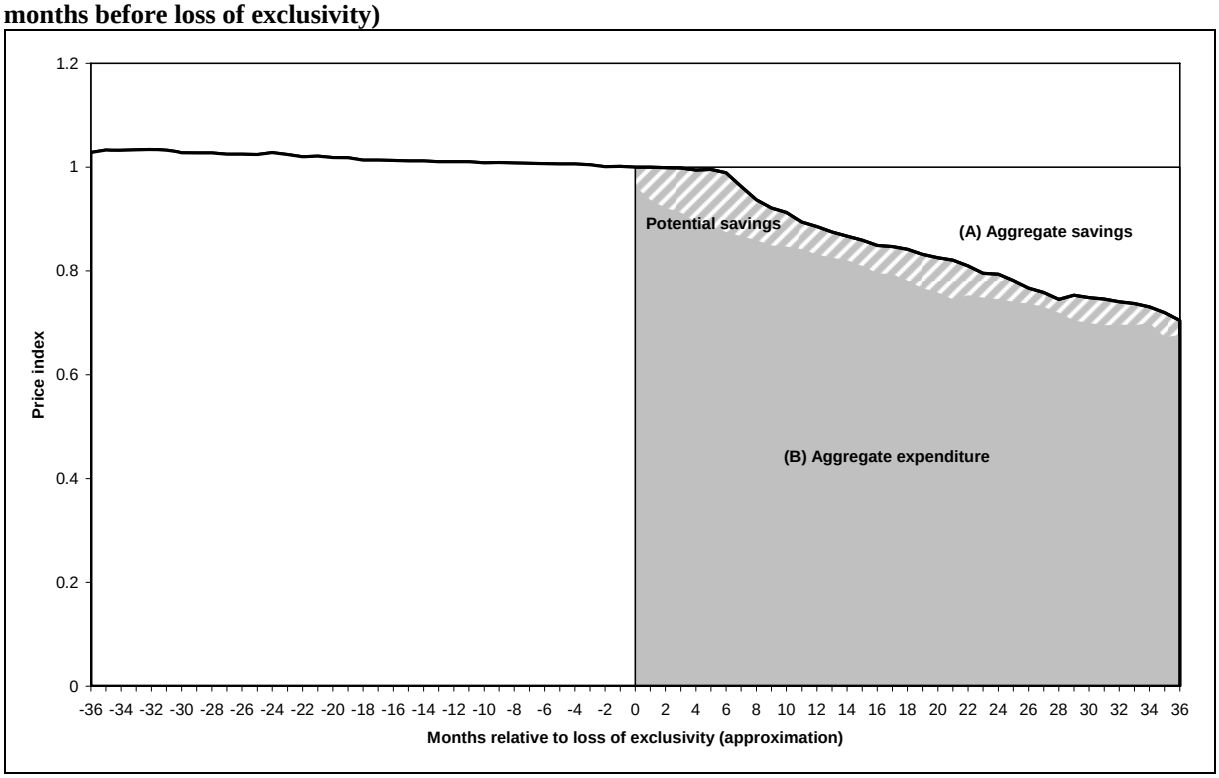
Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(185) At each month along the horizontal axis, the vertical difference between the two lines can be interpreted as (an approximation of) the difference between the price index that applied, in an average sense, in reality and the average price index that would have applied had entry taken place seven months earlier. By summing up these monthly differences over a longer period (see the grey area in Figure 21[72]), one obtains an estimate of the total potential savings that could have been obtained had generic entry

[72] Note that Figure 21 only displays a time window of 36 months before and 36 months after loss of exclusivity, of which only the period after loss of exclusivity matters for the purpose of calculating the costs of delayed generic entry. In reality, however, the relevant horizon extends beyond the 36 months following loss of exclusivity displayed in the Figure 21, as all INNs expiring up to December 2004 have a horizon exceeding 36 months. In the calculations for the period 2000 – 2007 presented subsequently in this section this aspect is taken into account.

taken place earlier, evaluated at constant consumption volumes.[73] Taking the volumes in the year prior to expiry as a benchmark,[74] the cost of the average time to entry on the E75 sample under consideration can, for the entire period 2000 – 2007, be roughly estimated at € 3 billion (at retail prices).[75]

Figure 22: Actual value sales, actual savings for generic entry after seven months following loss of exclusivity and potential savings if entry were immediate. (approximation; sample: E75 list; expiries in 2000 – 2006; all INNs with entry; weighted by INN; month 0 = loss of exclusivity; index = 1 for price six months before loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(186) In order to appraise the impact of these potential savings, these savings can be compared with the aggregate expenditure and savings on medicines for originator and generic products, on the sample investigated, over the period 2000 – 2007. By considering the price index before expiry (equal to 1) with the price index as it developed over time with an average time to entry of seven months, the aggregate savings derived over the period due to generic entry can be estimated at about € 14 billion (white area A in Figure 22), evaluated over the entire period 2000 – 2007,

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73 The comparison of price indices only allows for making meaningful statements about possible cost savings when these are evaluated at constant volumes. See also Subsection B.1.3.2.2. and B.1.3.2.3.

74 The sales in the year before expiry have been approximated by taking 12 times the sales in the month of expiry.

75 This estimate is based on 17 Member States only, where sufficient observations were available; for further details on methodology, see Annexes to Chapter A.

at constant (pre-expiry) volumes.[76] The aggregate expenditure (value sales) in the period after loss of exclusivity, net of these savings, is in the order of € 50 billion (grey area B, including shaded surface). Had entry been immediate following loss of exclusivity instead of delayed, this expenditure could still have been more than 5% or € 3 billion lower (indicated by the shaded surface).

(187) It should be noted that the figure of € 3 billion is likely to provide a lower bound of the potential savings due to earlier entry. Likewise, the figure of € 14 billion probably represents a lower bound on total savings due to generic entry. After all, the E75 list of molecules contains many, but not all expiries in all Member States.[77] Further, the above calculations have been made at constant volumes. As will be described in further detail below (in Subsection B.1.3.2.2.), INNs that turn generic may attract demand away from (expensive) substitute INNs that are still patent protected. Further, it should also be borne in mind that the given estimates relate to the period 2000 – 2007.

(188) The above mentioned price indices describe the impact of entry on average prices. As an average, they reflect the combined impact of price decreases on individual products (both originator and generic) and the importance that these products have in terms of sales. A more detailed view can be obtained by looking separately at the indices for originator products and generic products. Figure 23 provides an overview of the level of development of these separate indices over time.

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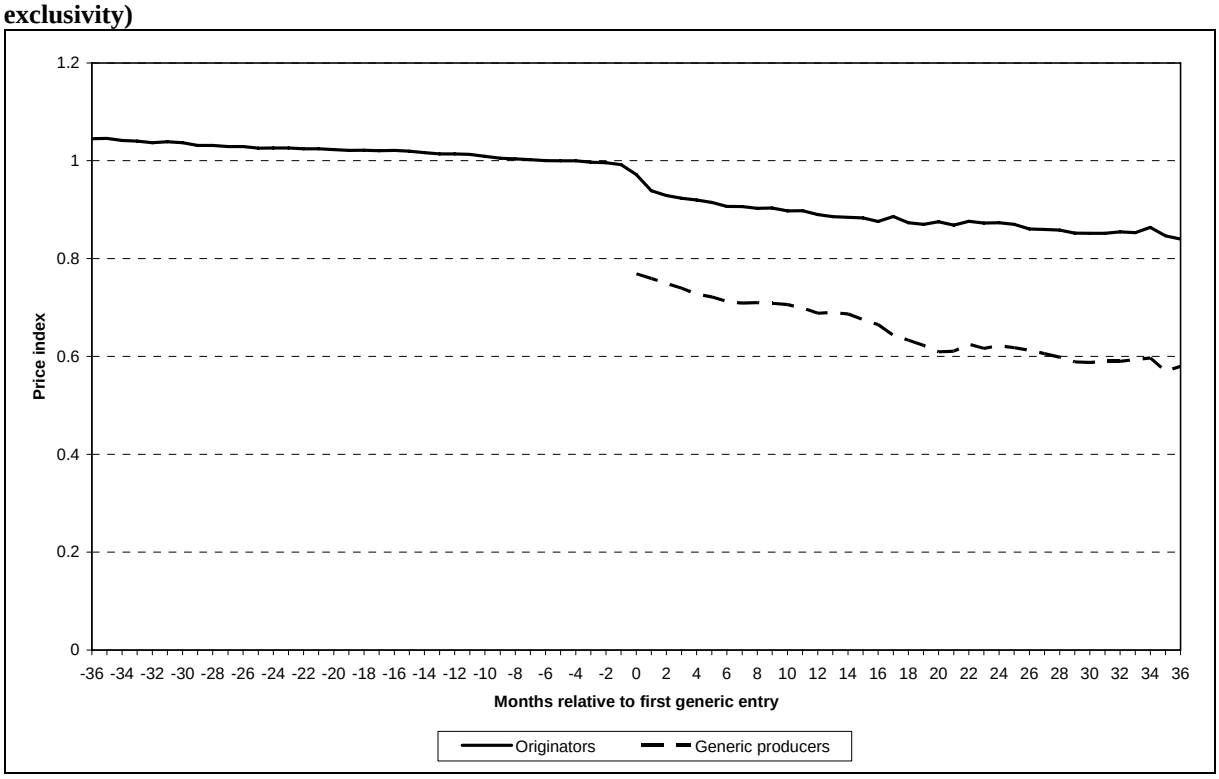
[76] In graphical terms, these savings correspond to the area above the grey area and below the horizontal line connected to a price index of 1. In Figure 21, the area is only depicted up to 36 months following loss of exclusivity, but in reality the area extends beyond that horizon, as all INNs expiring up to December 2004 have a horizon exceeding 36 months.

[77] As described in the Annex: Methodology, the list of E75 molecules represents over 90% of the value of all expiries in France, Germany, and the UK in the period 2000 – 2007, however. It is likely to comprise the vast majority of expiries in other Member States as well.

Figure 23: Development of originator and generic price indices for INNs with generic entry (sample: E75 list, all INNs with entry; weighted by INN; month 0 = entry; index = 1 for price six months before loss of exclusivity)

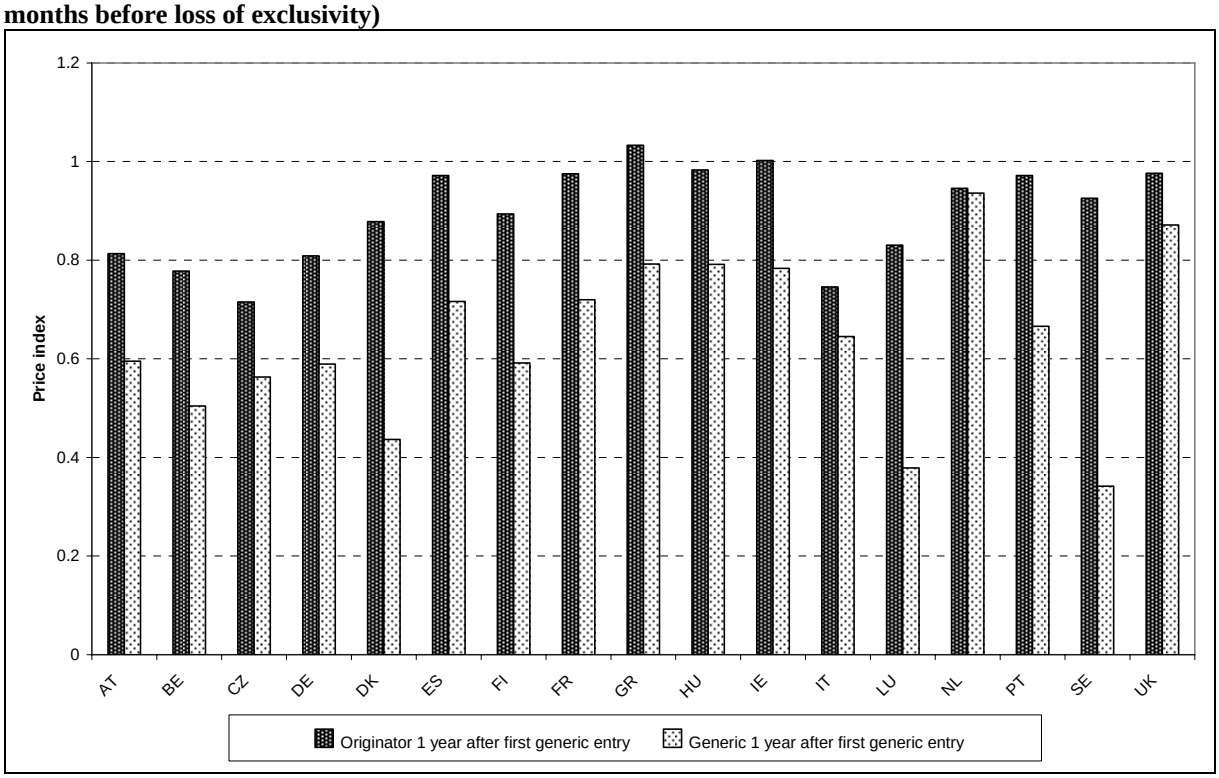


Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(189) Figure 23 shows that generics typically come onto the market at a prices that is about 25% lower than the price of the originator products prior to loss of exclusivity. In other words, the generic:originator price ratio on entry is about 0.75. Over time, the generic-originator price ratio drops to about 0.60. Also the price levels of the originator products for INNs facing generic entry appear to decrease somewhat.

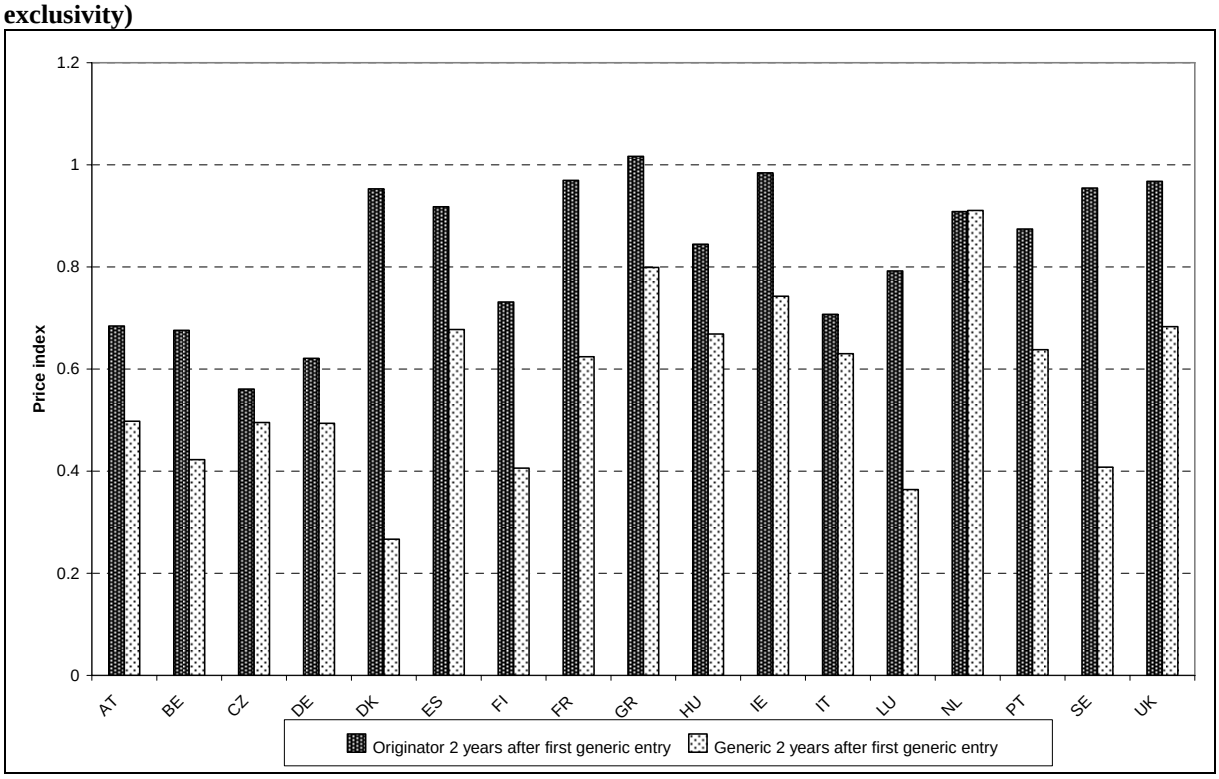
(190) These EU averages hide considerable variation between the EU Member States. Figure 24 and Figure 25 provide an overview of the price impact in a range of countries, measured one year after entry and two years after entry, respectively.

Figure 24: Development of originator and generic prices in the first year, by country (sample: E75 list, loss of exclusivity in 2000-2005; all INNs with entry; weighted by INN; month 0 = entry; index = 1 for price six months before loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data). Statistic for the Netherlands subject to further analysis.

Figure 25: Development of originator and generic prices in the first two years, by country (sample: E75 list, all INNs with entry; weighted by INN; month 0 = entry; index = 1 for price six months before loss of exclusivity)

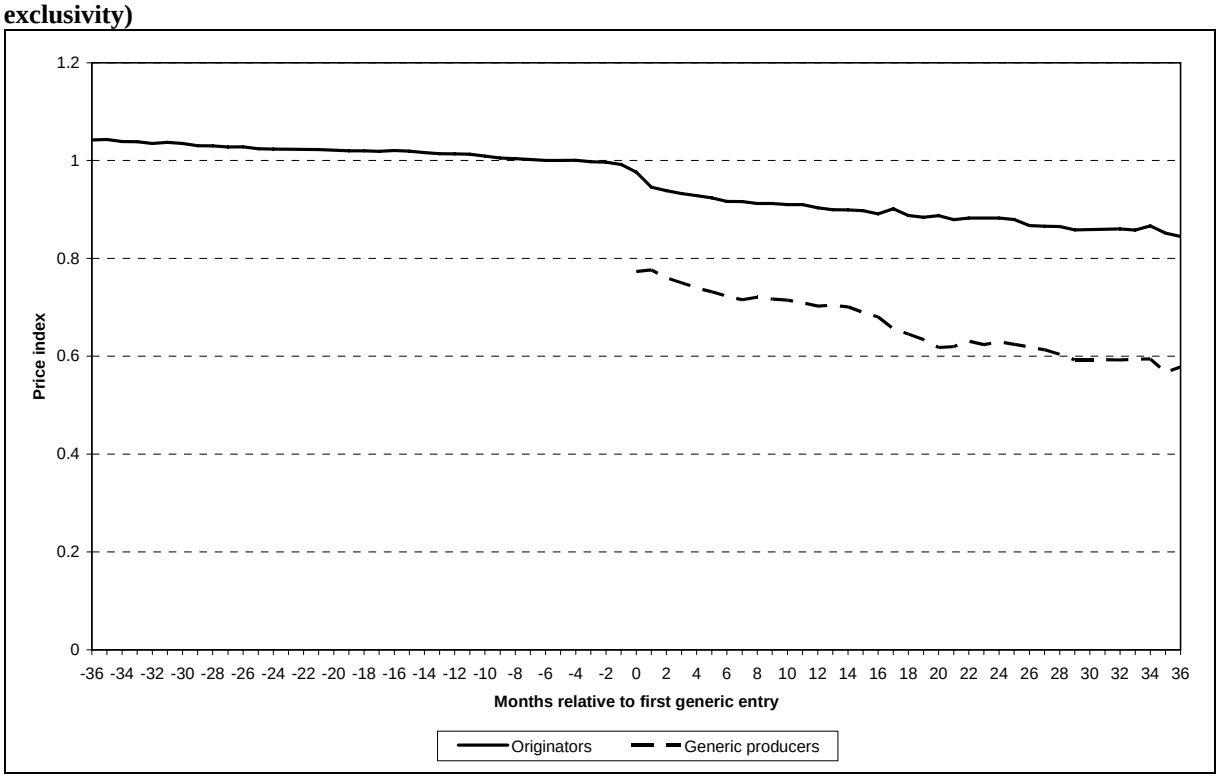


Source: Pharmaceutical Sector Inquiry (partially based on IMS data).

(191) The charts show that generic entry leads to the biggest generic price decreases in countries such as Sweden, Finland, Denmark, Austria, Germany, Belgium, Luxemburg and the Czech Republic. In each of these countries average prices for the INNs losing exclusivity appear to drop by more than 50% within the first two years. In Sweden, Denmark and Luxemburg price drops of this nature are typically achieved within the first year of entry already. Also within Member States, there was quite some variation among the various INNs.

(192) The indices reported relate to the prices of all products sold under the INN. The originator index may include products that have lost exclusivity and products that are still protected. An alternative way to present the impact of generic entry on prices is to consider only the prices of originator products (formulations) which have been exposed to generic entry. This results in Figure 26. Although this measure is more focused than the average indices described earlier, it is not necessarily more accurate or informative. It provides a different perspective. After all, as part of the life cycle strategy for INNs, originator companies may well have succeeded in shifting some of the demand towards formulations of the INN that still benefit from exclusivity (including second generation products) or even to other (exclusive) INNs altogether.

Figure 26: Trends in originator and generic prices for products with generic entry (sample: E75 list, all INNs with entry; weighted by INN; month 0 = entry; index = 1 for price six months before loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

1.3.2.2. Effects on Volumes

(193) The second main dimension in which generic entry may have an impact is on the volume of products sold and the market shares of the originator and generic companies.

(194) The combined market share of the generic companies is often referred to as the "generic penetration rate". The higher the penetration rate, the greater the savings for the health system are likely to be (for a given market size).

(195) Table 12 presents, for the EU as a whole, the generic penetration rate for the INNs in the E75 sample covered by this report that faced generic entry. The penetration rate is measured one year and two years after loss of exclusivity. Once again the set of INNs is limited in order to allow enough time to lapse before measuring the impact of generic entry. It is given in both volume [78] and value terms (righthand column).

Table 12: Generic penetration (EU average; sample: E75 list, all INNs with entry; weighted by INN)

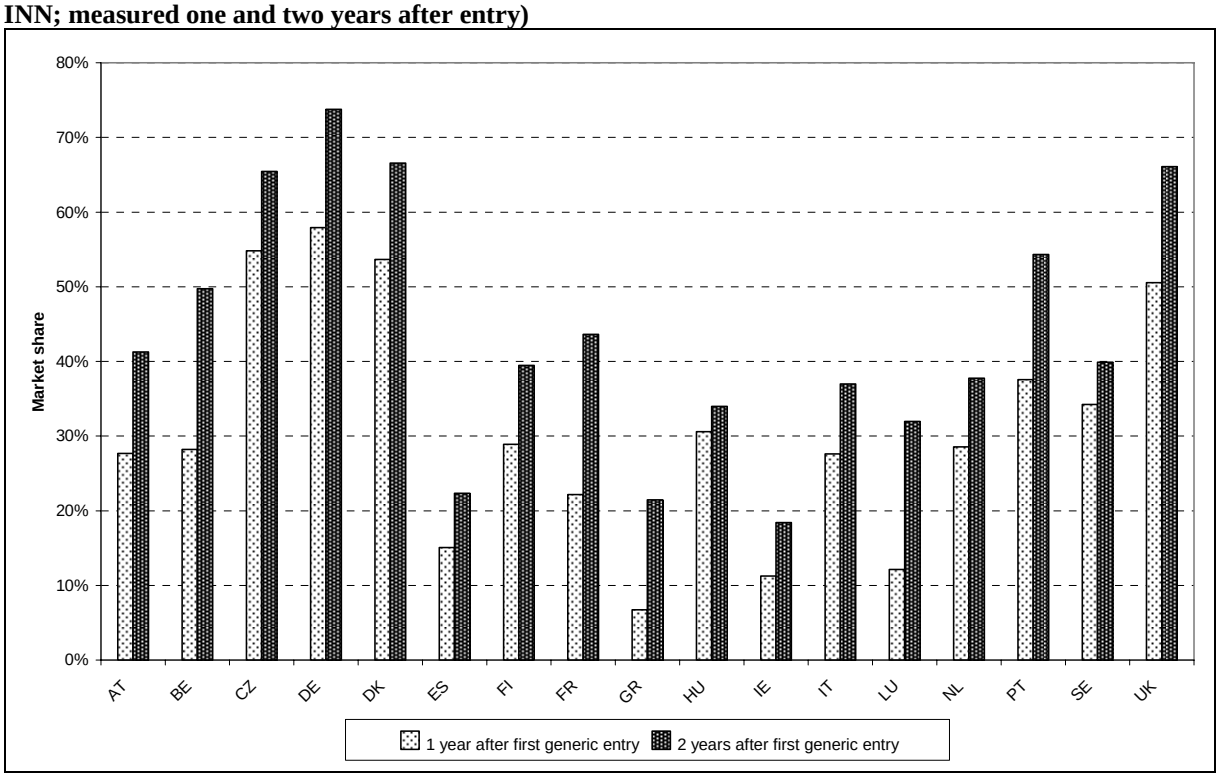
	Generic penetration rate (volumes)	Generic penetration rate (value)
Measured one year after first generic entry (INNs expired in 2006 or earlier)	30%	25%
Measured two years after first generic entry (INNS expired in 2005 or earlier)	45%	38%

Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(196) Again, there is considerable variation between the individual Member States. Figure 27 and Figure 28 show the generic penetration rate in a number of countries, again measured one year and two years after loss of exclusivity, by volume and value respectively.

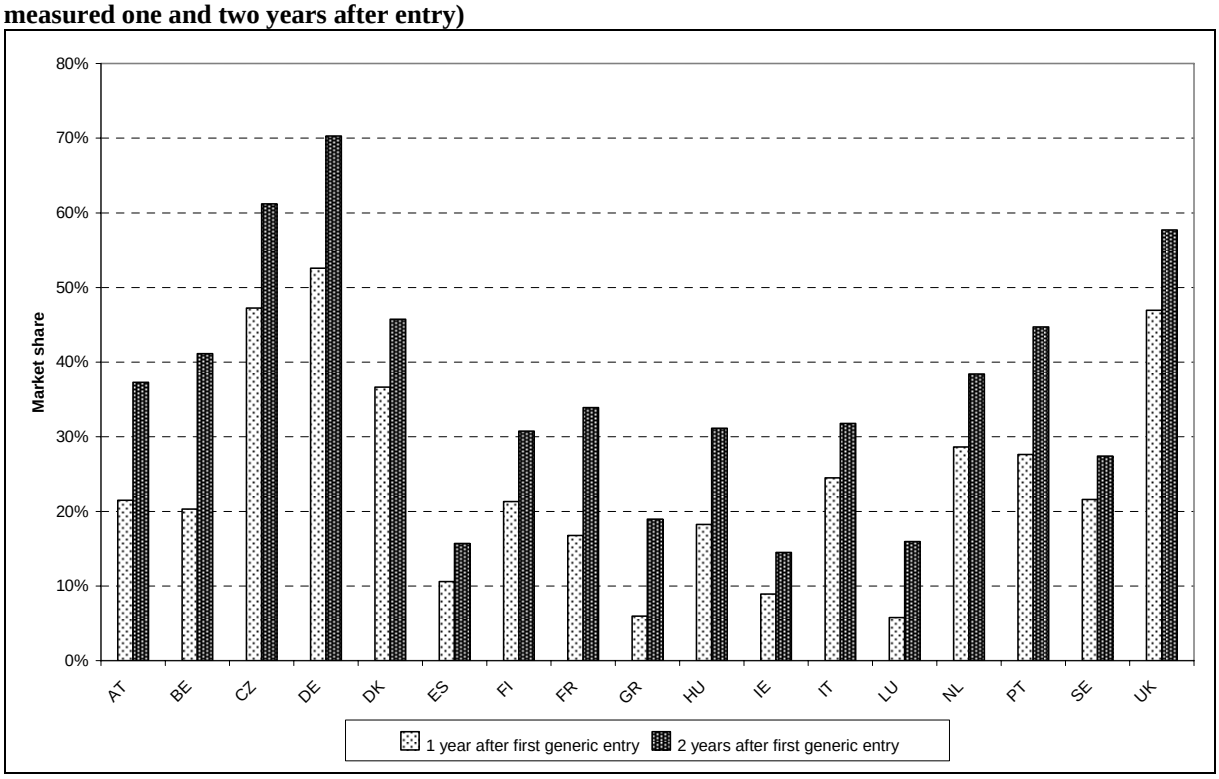
[78] For this volume index, IMS data on Standard Units are used in order to be able to aggregate consumption across different types of formulation (tablets, capsules, injections, etc.)

Figure 27: Generic penetration by volume, by MS (sample: E75 list, all INNs with entry; weighted by INN; measured one and two years after entry)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data).

Figure 28: Generic penetration by value, by MS (sample: E75 list, all INNs with entry; weighted by INN; measured one and two years after entry)



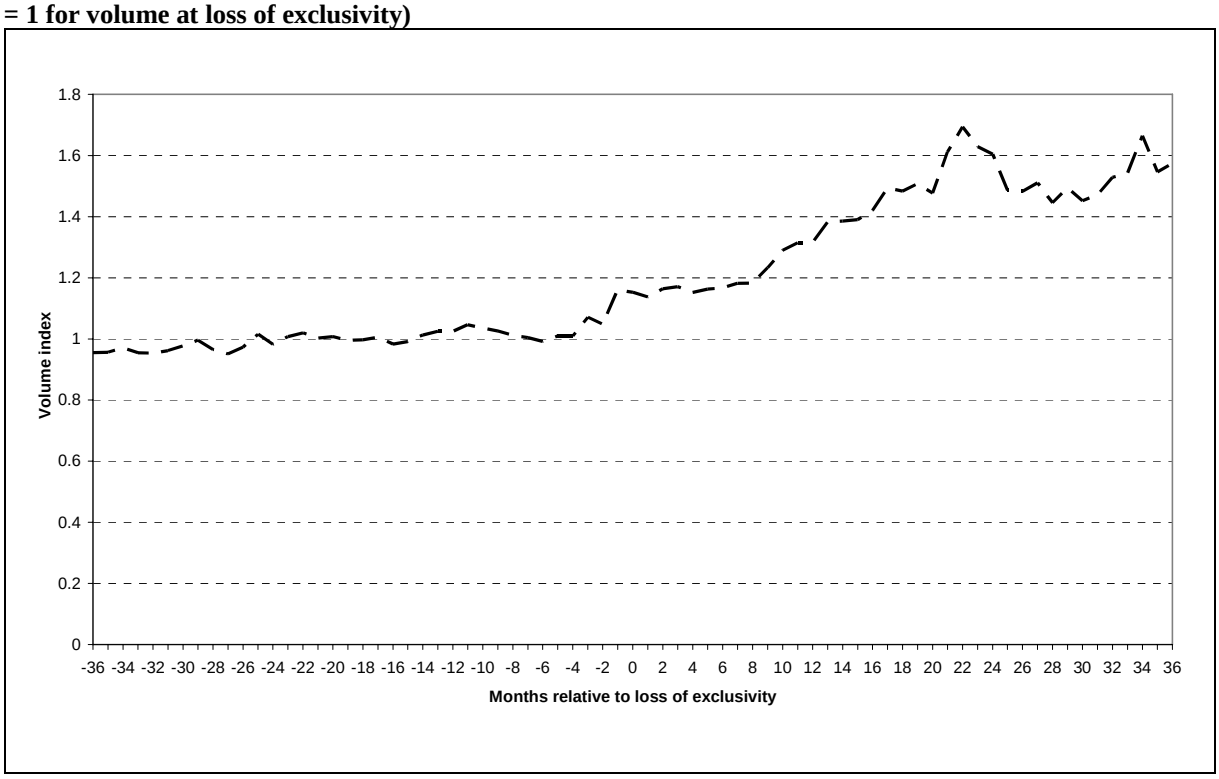
Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(197) Measured by volume and value entry by generic companies appears to have had a very strong effect in Germany, the Czech Republic, Denmark and the UK. In Germany,

generic companies built up a more than 50% share by value and volumes already within the first year. Measured only by volume also the Czech Republic and Denmark show a market share of generic companies exceeding 50% within the first year after entry.

(198) Generic entry – especially when it is accompanied by significant price reductions – may also lead to an increase in overall consumption of the medicine. Figure 29 plots the development of the overall volume over time by considering an index, which is set at a level equal to one (1) six months prior to the end of the exclusivity period[79].

Figure 29: Volume effects of generic entry (sample: E75 list; all INNs with entry; weighted by INN; index = 1 for volume at loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(199) In the three years before the loss of exclusivity, the consumption volume index remained fairly close to the 1.0 benchmark, but after generic entry the volumes consumed started to rise steadily. This will be partly related to the fact that the lower prices for the INNs losing exclusivity draws demand away from substitute products based on other INNs. This phenomenon is analysed in greater detail in the next section.

[79] The measure is taken six months before entry.

1.3.2.3. Effects on other Substitute Products

(200) Whenever a generic company enters with a generic version of a given INN, in the sense that it starts selling (some of the) formulations of the INN that have lost their exclusivity, this is likely to have an impact not only on sales of the INN concerned (in particular, the total level of sales and the sales of the originator), but also on the sales of substitute products based on different INNs. This subsection is to address this phenomenon by focusing on a small number of INNs. Given the different characteristics of each INN and of the relevant market on which they are sold, it is probably useful to zoom in on the INNs and their markets as opposed to looking at averages that could conceal wide variation. The data received are being further analysed for this purpose.

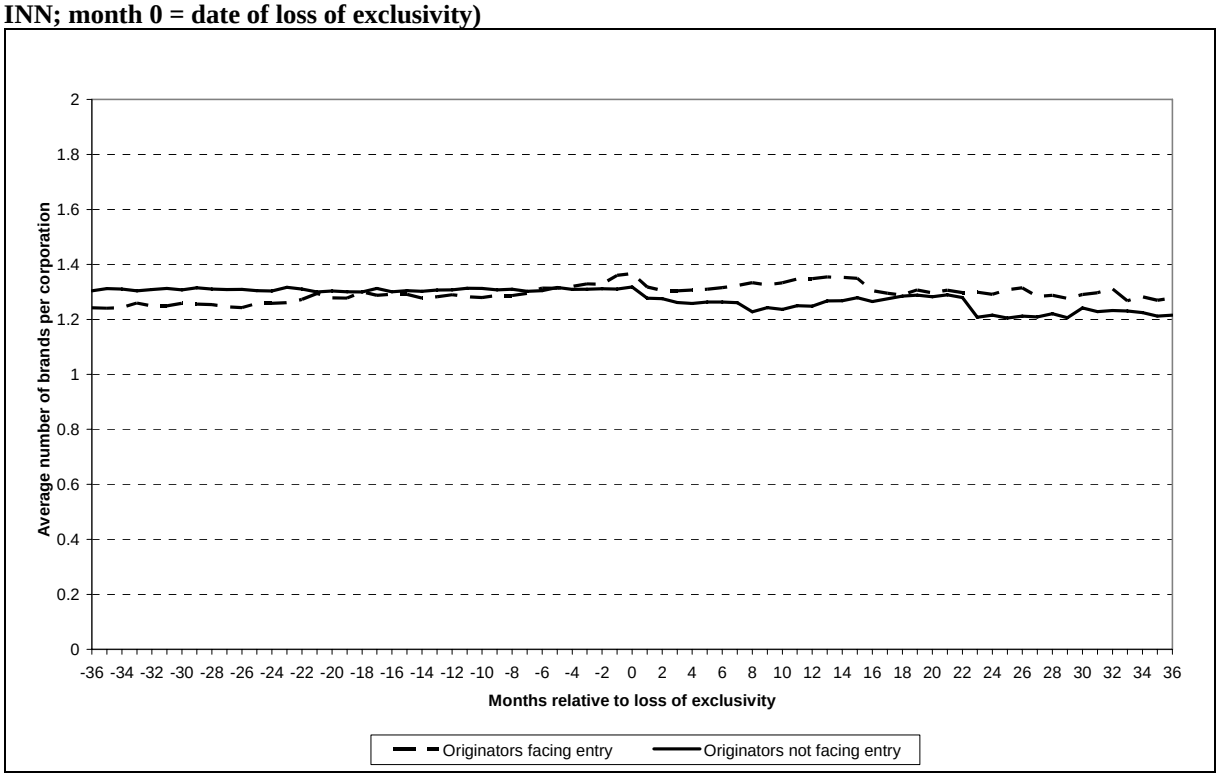
1.3.3. Responses of Originators

(201) As indicated in this report, there are a number of ways in which the originator can anticipate or react to the entry of generics into the market. For instance, the originator can react in the form of product proliferation, advertising, pricing or litigation.

(202) The first interesting point is how the product and brand portfolios develop over time. Figure 30 and Figure 31 below show the average number of brands per company and the average number of formulations per brand over time, respectively, differentiating between cases with and without generic entry.

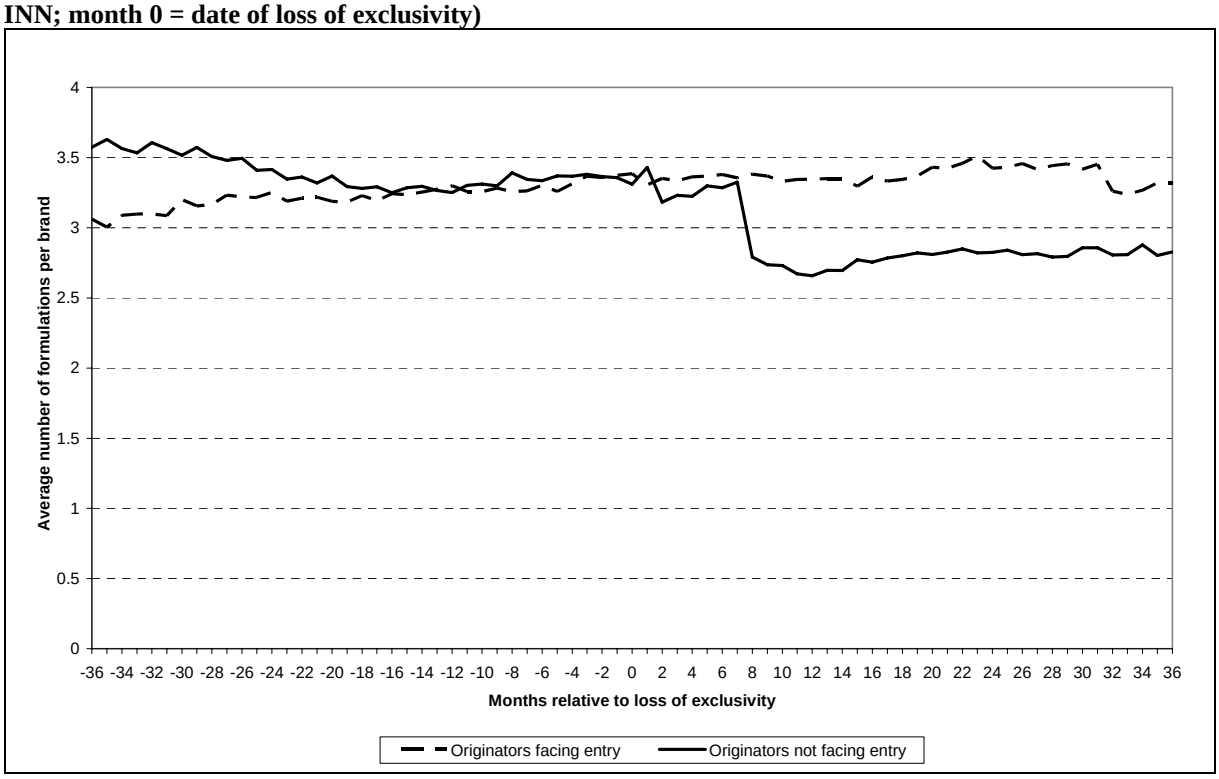
(203) In terms of number of brands per corporation there appears to be little difference between originators facing entry and not facing entry. Nor do there appear to be major developments over time in this respect, although a very slight increase might be observed in the number of brands per company in the period leading up to loss of exclusivity in those instances where entry took place. The average number of formulations per brand before loss of exclusivity appears to show an increase in those instances where entry took place, whereas a relative decline in the number is visible in instances without entry. One tentative conclusion is that in the period before the INNs lose exclusivity, originator firms facing the prospect of entry have a tendency to increase the number of formulations per brand in anticipation of future generic entry.

Figure 30: Average number of brands per company (sample: E75 list; all INNs with entry; weighted by INN; month 0 = date of loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

Figure 31: Average number of products per brand (sample: E75 list; all INNs with entry; weighted by INN; month 0 = date of loss of exclusivity)



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(204) Promotional activities are another tool that may be used to influence the demand for individual products. In particular, as indicated in the other sections of this report, it makes sense to divert promotional expenditure away from products that have lost exclusivity to products that are still protected. The data received in this connection are the subject of further analysis.

Summary

Of the medicines in the sample that were the subject of further in depth investigation and which had lost exclusivity in the period 2000-2007, about half faced generic entry within the first year after loss of exclusivity (EU average). Measured in value terms, these medicines represent about 74% of sales (sales value in the year of expiry).

The average time gap between the date on which the medicines lost exclusivity and the date of first generic entry was about seven months on a weighted average basis for the sample as a whole, whereas it was about four months for the most valuable medicines, with considerable variations across Member States and across medicines.

Generic companies began selling generic medicines on the market at a price that was, on average, 25% lower than the price of the originator medicines prior to the loss of exclusivity. Two years after entry, generic medicine prices were on average 40% below the former originator price. The market share (in volume terms) that the generic companies attained was about 30% at the end of the first year and 45% after two years.

In markets where generic medicines become available, average savings to the health system (as measured by the development of a weighted price index of originator and generic products) are almost 20% one year after the first generic entry, and about 25% after two years (EU average). The inquiry points to considerable differences, however, in the effect of entry of generics in the various EU Member States and across medicines.

Based on the sample of medicines under investigation that faced loss of exclusivity in the period 2000 – 2007, representing an aggregate post-expiry expenditure of about € 50 billion over the period (in 17 Member States), the preliminary report estimates that this expenditure would have been about € 14 billion higher without generic entry. However, the savings from generic entry could have been about € 3 billion more, further reducing expenditure for these medicines by more than 5%, if generic entry had taken place without delay.

2. The Regulatory Framework

(205) This section deals with the regulatory framework within the EU that stakeholders need to respect. While there is general consensus that the pharmaceutical sector is highly regulated along the entire value chain (including R&D activities), three areas of legislation seem to be of particular importance for the purpose of the pharmaceutical industry and this sector inquiry: (a) the legislation governing patents[80], (b) the legislation governing marketing authorisations and (c) the legislation governing pricing and reimbursement of pharmaceutical products.

(206) The rules governing these areas set the framework in which the companies operate. They therefore determine the conditions for competition. At the same time these rules might provide the companies with opportunities to exploit the legislative framework for their ends, as will be shown in the subsequent sections of the report.

(207) In order to facilitate understanding of the subsequent parts of this report, this section will briefly sketch the main aspects of the regulatory framework for patents, marketing authorisations and pricing and reimbursement.

2.1. Patents

2.1.1. The Rationale Behind Patents

(208) A patent is a legal title protecting an invention, which can be a product or a process, by granting its holder (usually an individual or a company) the right to prevent third parties from making, using, offering for sale, selling or importing the product (including the product obtained directly by a patented process) without the patent holder's prior consent.[81] In order to ensure a sufficient reward to the inventor for his or her creative work, preserve incentives for research and development in general, and stimulate commercialisation of the invention, patent protection gives the innovator an exclusive right to the commercial exploitation of the invention for a certain period of time.[82] In Europe, patent protection may be obtained for up to 20 years.[83] This period

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80 While other intellectual property rights such as trademarks also play an important role for the pharmaceutical sector, it is submitted that the protection of trademarks plays a role in particular for parallel trade, which is not covered by the sector inquiry. For this reason it was decided to concentrate in the subsequent description on the legislation governing patents and patent protection.

81 Article 28(1) TRIPS (WTO Agreement on Trade-Related Aspects of Intellectual Property Rights). In the words of the European Patent Office (EPO): "A patent is a legal title granting its holder the right to prevent third parties from commercially exploiting an invention without authorisation."

82 In the absence of this exclusive right, competitors could copy the invention while they have not incurred the cost of research and development (including the cost of failed attempts at invention) and thus offer the product at a much lower price than the inventor. The inventor would be driven out of the market and innovation in general would be deterred.

is calculated from the date the patent application is filed at the patent office of the territory concerned, which therefore determines the ultimate date to which the patent protection may extend for that territory.[84]

(209) During the period of patent exclusivity, the patent holder may be able to charge a price for the product resulting from the invention that is higher, often far higher, than its marginal cost of production. Patent owners may also conclude licence contracts, allowing others (usually in exchange for a fixed fee and/or royalties based on sales) to use or sell their invention. Patent holders may also cross-license the right to use their patented inventions.[85] The period of 20 years reflects the assessment by the legislator that the end of this period is the point in time where the cost to society of continued patent protection, in the form of extra profits to the patent holder resulting from its exclusive position, starts exceeding the benefits.[86] The knowledge that patent protection is limited in time will also encourage the patent owner to create new inventions, which can again be patented. It is therefore generally accepted that time limits on patents stimulate innovation.

(210) The pharmaceutical sector relies very heavily on patents to protect inventions (as compared to, for instance, secrecy, trade marks or first mover advantages in sectors

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83 In accordance with Article 33 TRIPS, Article 63 of the European Patent Convention (EPC) provides that the term of a European patent is 20 years from the date of filing of the application. A patent may, however, expire before the full 20 years have elapsed if the patent holder fails to pay annual renewal fees for the patent. See the section on national validation further below.

84 The system of "first to file" is used in Europe and most other parts of the world, as opposed to the "first to invent" system traditionally used in the USA. Under the Paris Convention for the Protection of Industrial Property, if within 12 months following the first application in any of the member states to the Convention an applicant makes further patent applications for the same invention in other member states, then, for the purpose of the patent examination, these subsequent applications will be regarded as if they had been made at the date of the first application (the "priority date"). Patents are territorial titles and inventors therefore have a major interest in getting the priority date of filing recognised for subsequent patent applications concerning the same invention in other countries. This recognition eliminates the risk that a subsequent patent application by the inventor is rejected on the ground that between the priority filing date and the date of the subsequent filing (a) the invention entered into the public domain through publication; or (b) someone else lodged an application for the same invention. Recognition of the priority date of filing reduces uncertainty for the inventor. The EPC recognises priority rights for first filings in any member of the WTO.

85 Currently there is no obligation for patent holders to grant interested parties a licence for the EU or individual Member States, even if the patent is not used for an extended period of time.

86 Unless the inventor sells the patent or grants a licence, the product resulting from the invention will first have to be marketed before it can start producing a reward for the inventor. The time between the patent application and the first marketing of the product concerned should therefore be deducted from the 20-year period to obtain the real period in which the invention produces a reward for the inventor. Since new pharmaceutical products take an exceptionally long time before they can be marketed, Community legislation provides for the possibility of "supplementary protection certificates" (SPCs) in the pharmaceutical field, extending the patent-related period of exclusivity. This period may be further extended by fulfilling certain requirements related to paediatric use research. Moreover, data exclusivity protection for new medicines can also extend the period of exclusive marketing. These mechanisms are explained further in this section.

with short product life cycles) and this up until the very moment of patent expiry. The importance of patents for the pharmaceutical sector was emphasised by EFPIA as follows:

> *"The extent to which IPR protection is an essential part of a particular industry's business model will largely depend on the cost, risk and time involved in bringing an innovative product to market, and on the cost and risk of imitation. […] Given the clear disparity between the high cost and risk of innovation in the pharmaceutical sector and the low cost and risk of imitation, it is self-evident that exclusivity and thus protection from imitation is needed if there is to be innovation."*[87]

(211) Patent rights are not designed to fence off the patent right holder from competition by other originator producers bringing to market competing products based on their own inventions. In the pharmaceutical field, such competition between patent-protected medicines for the same therapeutic use remains possible.

(212) As a return for patent protection, the information contained in the patent application enters into the public domain through publication. This information may, at least in Europe, be immediately used by others for the purpose of further research[88], e.g. in an effort to create their own patented product having a similar function. In the pharmaceutical field, such products are sometimes referred to as "me too" medicines, i.e. medicines that are structurally similar to – and that largely duplicate the action of – already patented medicines, without, in principle, infringing the original patent. Disclosure also allows competitors to improve the originally patented product and obtain a patent on the improvement.[89] The patent system is thus designed to foster innovation, not only by the patent owner, but also by competitors. In doing so, it ultimately enhances competition.[90]

(213) Once the period of protection of the invention has expired, anyone may use the invention commercially without the authorisation of the original patent holder. It is at this stage that, after having obtained a marketing authorisation from the national

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87 EFPIA: Intellectual Property and Pharmaceuticals, June 2008, pages 12 and 15.

88 This possibility to legally "use" the patented invention for experimentation (without a licence) is generally referred to as the "research exemption". Its purpose is to stimulate further inventions. A research exemption is laid down in Article 27(b) of the 1975 Luxemburg Convention on the Community Patent (the Community Patent Convention). Although this Convention never entered into force, the principle of a research exemption enshrined in it has been adopted widely in the national legislation of EU Member States and has been applied by national courts, albeit not always with the same clearly defined scope.

89 To the extent that the improvement makes use of the previously patented invention, a licence would normally have to be obtained from the original patent holder in order to be able to market the improved product. In this case, it may be in the interest of both patent holders to cross-license each other.

90 Another legal exemption allowing the "use" of the patented invention is enshrined in Article 10(6) of Directive 2001/83/EC, as amended by Directive 2004/27/EC), which allows generic competitors to conduct the necessary studies and trials for their application for a marketing authorisation for a generic version of a medicine. See the section on marketing authorisation further below.

authorities, producers of generic medicines will normally enter the market with generic versions of the previously patented active ingredient, thus creating competition for essentially the same medicine. At that point, competition will no longer take place exclusively within the originator industry. There will now also be competition between the originator company whose product is no longer covered by patent protection and its generic competitors. This type of competition will be based mainly on price and marketing effort. Indeed, competition may now even arise between the generic versions of the off-patent medicine and other medicines still under patent protection for the same therapeutic use.

(214) Apart from the above-described traditional functions of the patent system (in particular the exclusivity function with as its counterpart the function of adding to public knowledge) certain additional functions of patents have recently increased in importance. These include:

- retaining the freedom to develop one's own innovation further ("freedom to operate"); in particular in the pharmaceutical sector, a patent may be applied for not so much with a view to commercialising the invention itself, but rather in order to be able to carry out further R&D as regards the compound or process in question without later risking to infringe any patent that a third party might have acquired on the initial invention; thus, originator companies may apply for patents on new active chemical entities even before their precise therapeutic function is known;

- being accumulated as tradable assets (bargaining function), for instance, also in the pharmaceutical field, with a view to concluding a cross-licence agreement or to becoming a participant in a patent pool;

- protecting an innovation that may develop into an industry-wide technological standard (standardisation function); this function is less important in the pharmaceutical field;

- being accumulated as financial assets to secure investments (financing function);

- enhancing a company's high-tech reputation (image function).

2.1.2. Substantive Criteria for Obtaining a Patent in Europe

(215) Patent offices are government bodies that may grant a patent or reject the patent application based on whether or not the application fulfils the requirements for patentability. These criteria have over time been largely harmonised within Europe based on the European Patent Convention (EPC) of 1973.[91] On 13 December 2007, a

[91] The EPC is an inter-governmental agreement which now has 34 signatory countries, including all EU Member States and several countries not members of the EU (for instance Norway, Switzerland, Turkey). A further five countries (Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia,

new, revised Convention, often referred to as EPC 2000, entered into force, which contained a number of changes to the previous EPC, some of which are directly relevant to pharmaceuticals patents. Given that most pharmaceutical companies prefer to use the European Patent Office (EPO)[92] to obtain patents in Europe[93], in the following, the patentability criteria of the EPC will be described, and not those of the national patent offices in the EU. The latter are, however, largely similar, at least at the level of general principles.

(216) In the pharmaceutical industry, inventions mainly relate to new active ingredients with a therapeutic function, to new formulations of already existing active ingredients or to new ways of producing active ingredients. All of these are in principle patentable. Although the general public often thinks differently, it is not a requirement of patentability that a new medicine is more effective in therapeutic action than an already existing medicine.

(217) Patents covering new active ingredients can also be referred to as "primary", "basic" or "compound" patents. Patents covering products containing active ingredients already covered by a primary patent, or covering new production processes for the production of active ingredients already covered by a primary patent, are sometimes referred to as "secondary patents". For further details on the types of patents that can be found in the pharmaceutical sector, reference is made to the Annex to Chapter B.2.1: Claim Types.

(218) In accordance with Article 52(1) EPC, a patent will be granted if:

- the invention is new;
- the invention involves an inventive step; and
- the invention is susceptible of industrial application.[94]

There are also a number of exceptions to patentability laid down in the EPC.

First Condition: Novelty

(219) An invention is new if it does not form part of the "state of the art". In Europe, this concept comprises everything made available to the public, in any form or way, before

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and Serbia) allow granted European patents to be extended to their territories upon request. The EPC was revised in 1991 and again in 2000. The EPC 2000 entered into force on 13 December 2007 and contains a number of new or amended provisions relevant to pharmaceutical patents (OJ EPO, Special Edition No 4, p. 55).

92 The EPO commenced operations in 1978. It has about 4,000 patent examiners and total staff numbers around 6,500. Its headquarters are at Munich, Germany. Representatives of the contracting states of the EPC sit on the Administrative Council of the European Patent Organisation.

93 This emerges from the replies of originator companies to the Commission's requests for information.

94 For further details, please see also Article 27 TRIPs.

the date of filing of the patent application. Such publicly available information is called "prior art".

Second Condition: Inventive Step

(220) A patent involves an inventive step if the invention, having regard to the state of the art, is not obvious to a person skilled in the art. In order to assess this, the EPO follows the "problem-solution approach", consisting of three stages of analysis. First, the closest prior art is determined.[95] Then the objective technical problem to be solved is established, based on the difference between the claimed invention and the closest prior art. Finally, the EPO considers whether the claimed invention, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person. Inevitably, this last assessment is to some extent subjective and in principle a patent office could be more or less strict in this respect, granting patents more or less easily. One reason for not granting patents too easily is to avoid competition in the market place being endangered by giving "undeserved" exclusivity to a single market participant. On the other hand, innovation could be stifled if patents were granted too restrictively. It is an important interest of society, therefore, that patent offices strike the right balance.

Third Condition: Industrial Application

(221) Being susceptible of industrial application simply means that the invention can be made or used in any kind of industry, including agriculture.

Exceptions to Patentability

(222) Article 52(2) EPC states that (a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; and (d) presentations of information cannot be considered to be inventions.

(223) Article 53 EPC furthermore excludes (a) inventions, the commercial exploitation of which would be contrary to "ordre public"; (b) plant or animal varieties or essentially biological processes for the production of plants or animals[96]; and (c) methods for the

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95 The closest prior art is that combination of already known features which constitutes the most promising starting point for development leading to the claimed invention.

96 Article 1 of Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnical inventions requires Member States to protect biotechnological inventions under national patent law. According to Article 3 of the Directive, for the purposes of the Directive, inventions which are new, which involve an inventive step and which are susceptible of industrial application shall be patentable even if they concern a product consisting of or containing biological material or a process by means of which biological material is produced, processed or used. Biological material which is isolated from its natural environment or produced by means of a technical process may be the subject of an invention even if it previously occurred in nature. Although the EPO is not formally bound by the

treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body.

2.1.3. European Regulatory Framework for Patents

(224) Even at present, more than 50 years after the foundation of the European Economic Community, it is not possible to obtain a patent that is valid and enforceable throughout the Community. A Community Patent Convention was signed in Luxembourg in 1975, but never entered into force for lack of ratification by Member States. In 2000, the Commission put forward a proposal for a Council Regulation creating a Community patent[97], but this proposal has not yet been adopted. Accompanying proposals to establish a Community Patent Court, with appeals before the Court of First Instance[98], and to confer jurisdiction on the European Court of Justice in disputes relating to the Community patent[99] have also remained in deliberation. Most recently, in a Communication of 2007, the Commission has stated that the creation of a single Community patent continues to be a key objective for Europe. With respect to litigation, the Commission has indicated that the way forward could be to create a unified and specialised patent judiciary with competence for litigation on both European patents and future Community patents (thus avoiding duplication of jurisdictions). This judiciary would comprise a limited number of first instance chambers, which could make use of existing national structures, as well as a fully centralised appeal court which would ensure uniformity of interpretation.[100] The European Court of Justice would have to be respected as the final arbiter in matters of EU law, including questions related to the validity of future Community patents.[101]

Directive, the EPC Implementing Regulations were amended in 1999 to introduce extensions and clarifications binding the EPO and the national courts of the Contracting States, designed to ensure that the EPC would continue to be interpreted in line with the Directive.

97 Proposal for a Council Regulation on the Community patent, COM(2000) 0412 final (OJ C 337, 28.11.2000, pp. 278-290).

98 Proposal for a Council Decision establishing the Community Patent Court and concerning appeals before the Court of First Instance, COM(2003) 0828 final.

99 Proposal for a Council Decision conferring jurisdiction on the Court of Justice in disputes relating to the Community patent, COM(2003) 0827 final.

100 A ruling by a first instance chamber on a Community patent would automatically apply throughout the Community. For European patents resulting in a bundle of national patents, a ruling by a first instance chamber on any of the national patents would apply to all Member States where the European patent had been validated.

101 See the Communication from the Commission to the European Parliament and the Council - Enhancing the patent system in Europe, COM(2007) 0165 final. The purpose of this communication is to revitalise the debate on the patent system in Europe. See also the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: An Industrial Property Rights Strategy for Europe, COM(2008) 0465 final.

(225) At the moment, patents in the EU can be obtained only by filing a national application at each respective national patent office of the Member States or by filing a single patent application at the European Patent Office (EPO).[102] However, in the latter case, although only a single examination procedure will have to be undergone, national validation[103] of the "European patent" granted by the EPO in each Member State where the patent owner wishes the patent to exist and to be enforceable will still be necessary. The "European patent" – as it exists today – is thus merely a bundle of national patents.

(226) Since, as already mentioned, most pharmaceutical companies prefer to use the European Patent Office (EPO) to obtain patents in Europe, in the following, the examination procedures before the EPO will be described, and not those of the national patent offices in the EU. The text below focuses on the actual treatment of patent applications at the EPO after they have been filed there.

2.1.4. The Examination at the EPO Leading up to the Grant or Rejection of a Patent

(227) According to the EPO, on average, the procedure at the EPO takes about three and a half years[104] from the date the patent application is filed with the EPO until it is completed with the granting of a European patent, the abandonment by the applicant of the patent application or the rejection of the patent application. There are two main stages in the European procedure leading up to the EPO's decision to grant or reject a European patent:

(228) **Examination of formalities and search report preparation.** The Receiving Section of the EPO checks that the application meets all the formal requirements. If the formal requirements are met, the Search Division of the EPO will prepare a search report listing prior art documents that are the most relevant to assess the novelty and non-obviousness of the invention of the application. This search report is sent to the applicant together with a preliminary written opinion on whether the application seems to meet the substantive requirements of patentability. The application, the search report and the preliminary opinion are all made accessible to the public simultaneously, as soon as possible after the expiry of a period of 18 months from the priority date. This disclosure allows third parties to take note of the claimed invention and, if they so desire, to make third party observations under Article 115 EPC.

(229) **Substantive examination**. Following consideration of the search report and the preliminary opinion, the applicant may withdraw the application or ask for the application, with or without amendments, to be examined. In the latter case, the

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102 For the purpose of this report, there is no need to describe the application route through the international Patent Co-operation Treaty (PCT).

103 See the sub-section on national validation further below.

104 In 2007, a granted patent was published on average 43.7 months after the application was received. Irrespective of the outcome, it took the EPO an average of 39.5 months to complete the procedure. EPO Annual Report 2007, p. 22.

Examining Division of the EPO will, at the applicant's request, undertake a full examination. The request must be made within six months after publication of the search report and preliminary opinion. The examination itself may include one or more cycles of written objections from the Examining Division and written submissions from the applicant. Oral proceedings with the applicant may also be organised. If the EPO decides to grant a patent, it will publish a mention of the grant and the patent specification[105] in the European Patent Bulletin. The grant will take effect with the publication and will apply for a period of 20 years from the date the application was filed with the EPO. Patents granted by the EPO are also referred to as "European patents".

(230) If, during the examination, the application is seen not to respect the principle of unity of invention, the applicant may be asked to file one or more divisional applications, each covering a separate inventive concept. Divisional applications may also be filed at the initiative of the applicant. Such divisional applications will have the same priority and filing dates as the parent application, but will be treated as new applications procedurally. They will therefore normally be granted or rejected some time after the parent application, but, if granted, the divisional patent will have the same expiry date as the parent patent.[106] The possibility to file divisional applications provides opportunities to applicants to extend the period during which a patent application is pending.

(231) The role of third parties during the examination is, at present, limited. They may make written observations on the patentability of the invention. In these observations they can for instance point out existing prior art not yet identified. But the examination procedure remains ex parte, which is to say that the applicant is the only party before the EPO. There is no possibility for a hearing or for expert witnesses to be heard. Third parties do not receive any direct feedback from the EPO on the extent to which their observations have been taken into account.

(232) Procedures exist within the EPO to speed up, upon request, the process leading to the grant or refusal of a patent, taking into account the interest applicants may have in obtaining a speedy decision on their application. But applicants may also have an interest in drawing out procedures and delaying a final decision on their patent application. This may be the case, for instance, where the applicant needs more time to further develop the invention and its commercial applications. It is also possible that the patent application is weak and likely to be rejected, but the applicant wants to maintain legal uncertainty for potential competitors in the market place for as long as possible. The filing of multiple divisional applications could, for instance, be used for this purpose. At present, the EPO does not have many procedural tools at its disposal to prevent or counter delaying tactics by applicants, apart from the possibility for examiners to summon oral proceedings in order to speed up matters.

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105 A patent specification is the text of the patent as granted. It contains a description of the invention, any drawings that may exist, and the claims.

106 For further details see Article 76 EPC.

(233) In 2007, the EPO received over 140,000 patent applications.[107] In the same year, in total, 51% of final actions (outcomes) in examination were grants.[108]

2.1.5. Opposition and Appeal at the EPO

(234) Following the grant or rejection of a European patent there may be further stages before the EPO:

If the patent application is rejected:

- appeal against a decision to reject. Appeal against a rejection is possible. A final decision will then be taken by the Board of Appeal. This procedure will normally take about two years. No further appeal on substantive matters is possible.

If the patent is granted:

- opposition proceedings. A third party (often a competitor) may, within nine months after the publication of the grant of the European patent, file an opposition against the granted patent. Opponents and the owner of the patent are parties to the opposition proceedings, which are therefore *inter partes*. Oppositions can only be filed on the grounds that an invention is not patentable under Articles 52-57 EPC, that it does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a skilled person in the art, or that the subject-matter of the European patent extends beyond the content of the application as filed. After an exchange of written submissions by the parties, the Opposition Division of the EPO will normally convene oral proceedings with the parties and may hear expert witnesses. The opposition procedure typically takes about two years and can have one of three outcomes: rejection of the opposition (maintenance of the patent as granted); revocation of the patent; or maintenance of the patent in amended form.

  In 2007, 5.2% of granted patent applications were opposed.[109] In the same year, taking as a basis all decisions in opposition cases (without appeal) reached in that year, the granted patent was revoked in 38% of cases and

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107 EPO Annual Report 2007. For an examination of patent applications in the field of pharmaceuticals, see Chapter C.1.2.

108 The grant rate of 51% does not mean that 49% of applications are rejected by the EPO. At present, fewer than 3% of applications are formally refused. The remaining 46% of applications were abandoned by the applicant at any time during the procedure. Of course, abandonment may often take place because a rejection is anticipated.

109 EPO, Annual Report, p. 22.

maintained in amended form in 30% of cases, whereas the opposition was rejected in 32% of cases. [110]

- appeal after opposition. Following the opposition procedure, an appeal against the decision to reject the opposition, restrict in amended form or revoke the patent is still possible and can be filed by any party to the proceedings adversely affected by that decision. Such appeals are heard by the Boards of Appeal and the procedure typically takes up to three years.

National Validation and Patent Protection

(235) A granted European patent takes effect from the date on which the mention of its grant is published in the European Patent Bulletin. The European patent is published in the language of the proceedings (English, French or German), together with a translation of the claims in the two other official languages of the EPO.

(236) National law governs the conditions under which the European patent takes effect in EPC contracting states, which include all 27 EU Member States. A European patent must be validated at the national patent offices of the designated EPC contracting states before it can be enforced in the countries concerned. Validation generally requires the meeting of national translation requirements,[111] including the payment of national publication fees, if any, as well as the payment of annual renewal fees, in each country in which the patent holder wishes the patent to be valid. If renewal fees are not paid, the patent will lapse. Patent owners must normally use the services of national patent agents for this purpose. The costs involved for patent owners are considerably higher in the EU than in the USA or Japan.[112]

(237) Provided the patent has been validated in the Member State concerned, it grants full protection to the patent holder in the territory concerned from the date of the publication of the mention of the grant of the European patent. This allows the patent holder to ask the national courts to order that any (imminent) infringements cease and

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110 EPO, Annual Report 2007, p. 23, See Chapter C.1.2. for data specification to pharmaceuticals.

111 These translation requirements (and the accompanying publication fee) has recently been alleviated with the entry into force of the so-called London Agreement. This optional agreement is aimed at reducing the cost of translating patents granted by the EPO. It was concluded at an intergovernmental conference held in London on 17 October 2001 and entered into force on 1 May 2008. It is not an EU legal instrument. At present under the London Agreement, the European patent takes effect directly, without any translation and without any publication fee in France, Germany, the UK, Switzerland/Liechtenstein and Monaco. In Latvia, Lithuania and Slovenia, the European patent takes effect if the patent proprietor files a translation of the claims in the national language of the state concerned and pays the publication fee. In Denmark, the Netherlands, Sweden, Croatia and Iceland, the European patent takes effect if the patent proprietor files a translation of the claims in the national language of the state concerned and a translation into English of the description and pays the publication fee. In the 19 other EPC contracting states, a full translation of the European patent into the language of the state concerned is still required as well as the payment of a publication fee.

112 For further details see footnote 86.

to claim full damages. Moreover, under Article 67 EPC, provisional protection may already be obtained from the date of publication of the application. The scope of such protection is determined by the national law of the Member State concerned, with some providing only for the payment of reasonable compensation for infringement occurring during the period of provisional protection. Moreover, in many Member States, legal action on this basis is only possible once the patent has been granted.

(238) The protection offered by a patent therefore applies as follows:

Box: Civil protection conferred by patent rights

From priority date until date of publication of patent application (18 months after the priority date[113]): no specific protection. In this period, patent applicants usually keep the invention secret.

From date of publication of patent application until date of publication of mention of grant: provisional protection (in many Member States limited to reasonable compensation).

From date of publication of mention of grant until expiry of patent: full protection (legal enforcement actions and full damages).[114]

(239) As long as a granted patent has not been revoked by the EPO or by a national court, the risk of damage claims by the patent holder acts as a significant deterrent to generic market entry. Vice versa, if infringement of a patent is claimed by the patent holder against a competitor and the patent is subsequently revoked, whether by the EPO or by a court, the patent holder will, in most legal systems, not be liable for damages suffered by that competitor because the patent holder would be allowed to rely in good faith on the fact that he had been granted a patent. This shows that when the EPO grants a patent for a pharmaceutical product, it has immediate and important commercial consequences in the market, even if the patent may subsequently be revoked or amended in opposition.

2.1.6. National Enforcement and Invalidity Proceedings

(240) Once a European patent has been validated by a national patent office, the patent becomes legally enforceable in that Member State. The exact enforcement procedure open to the patent holder differs for each Member State, subject to a certain degree of harmonisation based on Community legislation.[115] For instance, if a generic company sells – or is about to sell – the patented product in the territory concerned, the patent

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113 The availability of protection may be hastened by applying for early publication of the patent application. See Article 93(1)(b) EPC.

114 For the protection offered by supplementary protection certificates (SPCs), see further below.

115 See in particular Corrigendum to Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights (OJ L 195, 2.6.2004).

holder may ask the national court to issue an interim injunction ordering the generic company, often subject to a penalty payment, to refrain from selling the allegedly infringing product. The main infringement procedure, which may take several years, will then determine whether the generic product in fact infringes the product. Especially if the generic company had already started selling the product in the territory concerned, compensation for any damage suffered may be claimed and awarded in the main proceeding.[116] The generic company, being the accused party in the main proceeding for enforcement, may in most Member States make a counterclaim of invalidity of the patent.[117] In an action for an interim injunction, however, such a counterclaim may be ignored by the judge.[118] Reportedly, there are considerable differences between the courts in different Member States in the ease or reluctance with which they grant interim measures.[119] Depending on national law, a generic company may also take the initiative itself to ask for a declaratory ruling of non-infringement prior to launching a generic product[120], or launch a revocation proceeding[121] before the court.

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116 For the period of provisional protection, between the moment of publication of the patent application and the moment of the publication of the patent grant, Article 67 EPC requires Member States to ensure that the applicant can claim compensation reasonable in the circumstances from any person who has used the invention in their territory. Following publication of the mention of the patent grant, full compensation of any losses suffered may be claimed, depending also on whether the infringer knew or should have known that he or she was infringing.

117 However, in Germany, for instance, infringement and invalidity proceedings are separate.

118 In an action for an interim injunction, the judge may order interlocutory measures if he or she is satisfied with a sufficient degree of certainty that the applicant is rightholder and that the applicant's right is being infringed (or that such infringement is imminent). See Corrigendum to Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights (OJ L 195, 2.6.2004), Article 9(3). Such measure may, in appropriate cases, even be taken "without the defendant having been heard, in particular where any delay would cause irreparable harm to the rightholder". The judge may, however, ask the patent holder to provide adequate security to ensure compensation for any prejudice suffered by the defendant and may, where it is subsequently found that no infringement has taken place, order such compensation. Provisional measures taken without the defendant having been heard are subject to review at the request of the defendant, once the latter has been notified. See Article 9(4) of the same Directive.

119 Information based on replies from originator companies to the Commission's requests for information. Belgium is mentioned as a country where it is very easy to obtain an injunction. In the United Kingdom, the patent holder has to show that there is a serious issue to be tried in order to obtain an injunction. Reportedly, in Germany and the Netherlands the courts may take the merits of the case into account in considering whether to grant an interim injunction.

120 According to replies from generic companies to the Commission's requests for information, in many Member States declaratory rulings of non-infringement are not possible or subject to disclosure to the originator of confidential product information.

121 Strictly speaking, invalidity of a patent would be claimed as a defence in an enforcement action, whereas if a company takes the initiative to attack a patent, this would normally be called an action to revoke the patent. However, in practice the precise terminology may differ. For the purpose of this report, the terms "invalidity", "revocation" and "annulment" are used interchangeably.

(241) National courts therefore remain the ultimate arbiters of the validity of a patent in their territory. This means that any legal action needed to enforce or to invalidate a patent or any action for a declaratory ruling of non-infringement, has to be brought before the national courts of each country concerned.[122] This forces both challengers and enforcers to multiply national court procedures, at considerable cost to all parties. Moreover, there is a considerable risk of diverging judgments in different Member States on the substantive question of whether the same patent granted by the EPO is infringed or invalid.[123]

(242) Divergences regarding the validity of a patent may also exist between national courts and the EPO. If the EPO revokes a European patent in opposition (or appeal), that patent will be revoked in its entirety and *ab initio* in all designated Member States. Such a revoked European patent can therefore no longer be enforced in national courts. The reverse, however, is not true: if the EPO upholds a European patent in opposition (or appeal), that patent may still be held invalid by national courts for their own territory. For instance, in certain Member States, such as the United Kingdom, it is possible for a patent to be upheld in opposition by the EPO, but to be held invalid by the national court, either before or even after the EPO has given its final ruling. In certain other Member States, however, national courts may decide to stay the proceedings until after the EPO has given a final ruling, in order to take that ruling into account, even if the national court is not bound by the EPO ruling.[124]

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122 The courts of the Member State in which the patent has been validated have exclusive jurisdiction in proceedings concerning the registration or validity of that patent, irrespective of the domicile of the parties and irrespective of how the question of validity of the patent was raised in a proceeding (for instance, in objection to an infringement action or in support of a declaratory action seeking to establish that there has been no infringement of the patent). See Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (OJ L 12, 16.01.2001), in particular Article 22. See also Case C-4/03, Gesellschaft für Antriebstechnik mbH & Co. KG v. Lamellen und Kupplungsbau Beteiligungs KG, judgment of 13 July 2006, [2006] ECR I-6509, in which the European Court of Justice held that exclusive jurisdiction applies whatever the form of proceedings in which the issue of a patent's validity is raised, be it by way of an action or a plea in objection. See also Case C-539/03 Roche Nederland BV and Others v Frederick Primus and Milton Goldenberg, judgment of 13 July 2006, [2006] ECR I-6535, in which the ECJ confirmed that, given the current legal framework in place, each national patent can only be enforced before the national court where that patent is been validated, even if similar alleged infringements are taking place by other legal entities of the same undertaking in other Member States. The same logically applies to claims for invalidity of patents.

123 Even if the European Court of Justice held in Case C-539/03 that there is no risk of contradictory decisions for the formal reason that each national procedure involves a defendant domiciled in that Member State and concerns acts committed in the territory of that Member State only, nevertheless, on substance, the different national courts will all deal with the same question of whether the patent is valid or not. They may therefore come to different conclusions on this question, depending also, as the European Court of Justice points out in the same case, on the context of the relevant national law in force in that Member State. As a result, the validity of a patent granted by the EPO may be interpreted differently by the courts of different Member States.

124 In Germany, where infringement and invalidity proceedings are separate, it is not possible to initiate invalidity proceedings while an opposition is still pending at the EPO. Infringement proceedings, on the

(243) As published by the European Generics Association, certain national courts have separate procedures for enforcement and invalidation of patents, which, as they are not linked, means that invalidity of the patent cannot be raised as defence against an enforcement action.[125] Another point noted by generic companies is that before certain national courts it is difficult to challenge the validity of the granted European patent as long as opposition proceedings before the EPO are pending.[126] In that case, the court may wait until the EPO has given a final ruling. This may delay the national ruling by up to five years. All that time, the parties concerned face uncertainty over the validity of the patent.

2.1.7. Settlements

(244) Court proceedings to enforce or invalidate a patent may also be settled between the parties. In such a settlement the party that initiated the court proceedings will agree to withdraw its case. Depending on the expected outcome of the court case the withdrawing party may receive some benefit from the other party.

2.1.8. Supplementary Protection Certificates

(245) Council Regulation (EEC) No 1768/92 of 18 June 1992 created a supplementary protection certificate (SPC) for medicinal products.[127] The SPC amounts to a kind of extension of the patent right for a maximum of five years. However, the SPC extends only to the specific medicinal product and uses which had been authorised. SPCs were introduced to compensate for the length of time it takes between a patent application for a medicinal product and the time when that product can for the first time be effectively marketed in the European Economic Area (EEA). The Regulation provides that holders of both a patent and an SPC for a medicinal product must be able to enjoy a maximum period of up to 15 years' effective protection in every Member State from the time the medicinal product in question first receives marketing authorisation in the EEA. The purpose is to give medicinal products an effective period of protected marketing comparable to other industries with less stringent pre-marketing requirements.

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other hand, may be initiated pending opposition, but may be stayed by the Court until after the EPO has given a final ruling.

125 Germany, Hungary, the Czech Republic and Poland are mentioned. See European Generic Medicines Association (EGA): Patent-related Barriers to Market Entry for Generic Medicines in the European Union, May 2008, p. 21. However, in Germany, for instance, the court competent for the action for infringement may consider staying the procedure until the decision on the validity of the patent has been taken.

126 Germany, Austria, Slovenia and Sweden have been mentioned as examples in replies from generic companies to the Commission's requests for information.

127 Council Regulation (EEC) No 1768/92 of 18 June 1992 concerning the creation of a supplementary protection certificate for medicinal products (OJ L 182, 2.7.1992, pp. 1-5).

(246) The following table shows by way of example how an SPC works in practice,[128] i.e. how it can lead to the extension of marketing exclusivity for pharmaceutical products:

Box: Protection through SPC

Patent application = 1985 Patent expiry = 2005 (20 years later)
If first marketing authorisation in EU = 1990 => 15 years patent protection, no SPC protection. Total protection = 15 years. Protection ends with patent expiry in 2005.
If first marketing authorisation in EU = 1993 => 12 years patent protection + 3 years SPC protection. Total protection = 15 years. Protection ends in 2008.
If first marketing authorisation in EU = 1995 => 10 years patent protection + 5 years SPC protection. Total protection = 15 years. Protection ends in 2010.
If first marketing authorisation in EU = 2000 => 5 years patent protection + 5 years SPC protection. Total protection = 10 years. Protection ends in 2010.
If first marketing authorisation in EU = 2001 => 4 years patent protection + 5 years SPC protection. Total protection = 9 years. Protection ends in 2010.[129]

(247) SPCs do not apply to all pharmaceutical patents. Certificate applications may be made for any product which is protected by a basic patent[130] on the territory of a Member State and which has received marketing authorisation in that Member State as a medicinal product in accordance with the Community code concerning medicinal products for human use. The application for an SPC must be lodged in each Member State concerned within six months of the date on which marketing authorisation in that particular Member State was granted. This creates legal certainty for potential generic competitors, since they will know at an early stage when the period of protection of the medicinal product is due to expire and when they can start preparations for market entry. The Regulation provides that any person may submit an application or bring an action for a declaration of invalidity of the certificate. An appeal is also possible.

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128 For the sake of simplification, months and days have not been taken into account.

129 For an explanation of how the period of marketing exclusivity under Directive 2001/83/EC as amended by Directive 2004/27/EC may add to the overall period of protection for the patent holder, see the next section on marketing authorisations (B.2.2.).

130 Article 1 of the Regulation defines "basic patent" as a patent which protects the active ingredient(s) of a medicinal product. The main aim of the Regulation is to stimulate research in the EU into new active ingredients. According to point 11 of the Explanatory Memorandum to the proposal for the Council Regulation (COM(90) 0101 final), as cited in Case C-431/04 Massachusetts Institute of Technology, judgment of 4 May 2006, [2006] ECR I-4089, paragraph 19, "the proposal for a Regulation therefore concerns only new medicinal products. It does not involve granting a [SPC] for all medicinal products that are authorised to be placed on the market. Only one SPC may be granted for any one product, a product being understood to mean an active substance in the strict sense. Minor changes to a medicinal product such as a new dose, the use of a different salt or ester or a different pharmaceutical form will not lead to the issue of a new [SPC]".

(248) To correctly calculate the duration of the SPC, the Member State concerned must be informed by the applicant of the date of the first grant of a marketing authorisation for the product anywhere in the EEA. In one case pursued by the European Commission, AstraZeneca, an originator company, had made misleading representations to national authorities concerning the date of first marketing authorisation in the EU, deliberately using a later date. The Commission considered this an abuse of a dominant position. In its Decision, the Commission imposed a fine of € 60 million on AstraZeneca.[131]

(249) Regulation (EC) No 1901/2006 of the European Parliament and of the Council of 12 December 2006 on medicinal products for paediatric use provides for a "six-month" extension of the SPC duration under certain conditions in order to encourage research on paediatric applications of medicines.

Summary

In Europe, patent protection can last up to 20 years from the date of a patent application. For the pharmaceutical sector, where the time between filing a patent application and market launch can be significantly longer than in other sectors, supplementary protection certificates (SPCs) can be issued. These extend the effective protection of products already on the market by a maximum of five years.

Despite significant efforts, neither a Community patent nor a Community jurisdiction for patent matters exist. The European Patent Office handles centralised patent applications (and opposition and appeal procedures relating to granted patents). However, once granted, the European patent turns into a bundle of national patent rights, which, in court, must be challenged at national level. This can lead to diverging national decisions and is costly and time-consuming for all stakeholders concerned.

[131] Commission Decision of 15 June 2005 in Case COMP/A.37.507/F3 - AstraZeneca, currently under appeal. AstraZeneca claimed that the date to be used for the calculation of the SPC was the date of "effective marketing", i.e. after conclusion of the pricing and reimbursement negotiations with the national authorities, rather than the earlier date on which the technical marketing authorisation was granted. AstraZeneca was successful at some, but by no means all national patent offices in obtaining in this manner an excessively long SPC period. In those Member States where AstraZeneca was successful, the expiry date was often later corrected by the national courts, in proceedings brought by its competitors. The fine of € 60 million was imposed for two separate infringements, one of which was the one described here. A preliminary ruling in the case was also made by the European Court of Justice in Case C-127/00 Hässle AB v Ratiopharm GmbH, [2003] ECR I-14781. The Court ruled that the concept of first authorisation to place on the market in the Community refers solely to the first marketing authorisation granted in any of the Member States and does not refer to authorisations on pricing or reimbursement of medicines.

2.2. Marketing Authorisations

(250) In the EU[132], medicinal products may only be placed on the market after they have obtained marketing authorisation (MA): MAs are therefore of crucial importance for producers of medicinal products, be they either originator companies or generic companies. Two types of authorisations are available:

- *national authorisations,* which are issued by the competent authorities of the EU Member States and cover their own territory. A national authorisation can be extended to other EU Member States by using the mutual recognition procedure (MRP). Moreover, in case where no national MA has yet been granted, the decentralised procedure (DCP) allows for the submission of an application in several Member States at the same time and for the choice of one Member State which will act as Reference Member State (RMS);

- *Community authorisations,* which are issued by the European Commission for the entire territory of the EU on the basis of the centralised procedure. This procedure has the advantage for the applicant that a single application will provide him with an authorisation allowing him direct access to all EU markets.

(251) Each marketing authorisation decision is taken on the basis of scientific criteria concerning the quality, safety and efficacy of the medicinal product concerned: these three criteria are used to assess the risk-benefit balance of the notified medicinal product. The underlying objective of MAs is the need to protect public health within the Community. For this reason, factors such as the appropriateness of the pricing, the level of reimbursement or the patent status of the product should not be taken into account when assessing the risk-benefit balance.[133]

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132 Norway, Iceland and Liechtenstein which together with the EU27 form the EEA have, through the EEA agreement, adopted the complete acquis communautaire on medicinal products. They are therefore parties to the Community marketing autorisation procedures, with the only exception that legally binding acts adopted by the EU (e.g. Commissions decisions) do not directly confer rights and obligations but have first to be transposed into legally binding acts in the respective countries. The Marketing Authorisations granted by Norway, Iceland and Liechtenstein are eligible for the mutual recognition procedures in the same way as marketing authorisations granted by Member States. In this section, reference is made only to the EU as it is the scope of the sector inquiry.

133 See Article 81 of Regulation (EC) No 726/2004 of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency, OJ L 136, 30.4.2004, p. 1 (as last amended by Regulation (EC) No 1394/2007, OJ L 324, 10.12.2007, p. 12) and Article 126 of Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community Code relating to medicinal products for human use, OJ L 311, 28.11.2001, p. 67 (as last amended by Directive 2008/27/EC, OJ L 81, 20.3.2008, p. 45); each reference in the text to Regulation (EC) No 726/2004 will refer to the Regulation as amended ("Regulation"); each reference in the text to Directive 2001/83/EC will refer to the Directive as amended ("Directive"). Article 81 of the Regulation and Article 126 of the Directive provide that an authorisation to market a medicinal product shall not be refused, suspended or revoked except on the grounds set out in the Regulation and in the Directive.

(252) Within the framework of the sector inquiry, data on applications for marketing authorisation procedures was gathered.[134] In general, the data collected shows that the number of applications for marketing authorisations increased over the period 2000-2007 for a large number of Member States.[135] The reported information also shows that for some Member States, the number of applications submitted by generic companies increased more significantly compared to the number of applications by originator companies.[136] The information provided by EMEA shows that the number of applications based on the centralised procedure increased over the period 2000-2007[137] and that generic producers increasingly use the centralised procedure since this possibility was introduced in 2005 for generic applications of centrally authorised medicinal products.[138] Concerning the number of marketing authorisations granted, it follows from the data available that, over the period 2000-2007, the number of authorisations granted increased (trend) over the period in some Member States[139] as well as before EMEA and decreased in other Member States[140].[141] The data collected shows that there is a growing backlog as regards the treatment of applications for marketing authorisations: the backlog concerns the applications of both originator companies and generic companies. This backlog seems to be more important in some Member States which act in general as RMS such as for example Austria, Germany and the UK.[142]

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134 The conclusions hereafter are based on the data provided by the national MA authorities and EMEA in answer to requests for information from the Commission. However, the data provided does not appear to be complete or reliable in the same way for all Member States or, in some cases, does not allow to draw conclusions.

135 There is an increase (trend) over the period 2000-2007 in Austria, Belgium, Bulgaria, the Czech Republic, Germany, France, Greece, Hungary, Ireland, the Netherlands, Portugal, Romania and Slovenia.

136 This concerns for example Austria, Belgium, Germany and Portugal.

137 The number of applications reported for 2000 was 36 and 93 for 2007.

138 In 2006, 3 generic companies were reported to have applied for marketing authorisations at EMEA and 8 were reported in 2007.

139 For example Austria, the Czech Republic, Denmark, France, Germany, the Netherlands, Portugal and Slovenia.

140 For example Belgium, Bulgaria, Greece, Hungary, Ireland, Latvia and Romania.

141 The increase in the number of applications for marketing authorisation as well as in the number of marketing authorisations granted in some Member States does not reflect an increase in the number of novel medicines (new molecular entities) launched over the period 2000-2007. See Figure 5 in Section B.1.1.1.2.4., which shows that the number of such medicines reaching the market has decreased over time.

142 For further details see Chapter D.2.

2.2.1. Centralised Procedure – Community Authorisation

(253) *Legal basis.* Regulation (EC) No 726/2004[143] (hereafter "Regulation") lays down a centralised Community procedure for authorisation of medicinal products based on a single application, a single evaluation and a single authorisation.[144]

(254) *Scope.* Pursuant to the Regulation, the use of the centralised procedure is compulsory[145] for biotechnology medicinal products[146], orphan medicinal products[147] and medicinal products containing an entirely new active substance for which the therapeutic indication is the treatment of specific diseases[148]. On the other hand, the use of the centralised procedure is optional for other medicinal products not appearing in the Annex of the Regulation and containing a new active substance not yet authorised in the Community, medicinal products which constitute a significant therapeutic, scientific or technical innovation or which are in the interest of patients at Community level.[149] Generic applications of centrally authorised medicinal products may also be authorised via the centralised procedure.[150]

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143 This Regulation has replaced Regulation (EEC) No 2309/93 of 22 July 1993 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Agency for the Evaluation of Medicinal Products.

144 The Regulation refers to the Directive in relation to several provisions, for example: definitions, particulars and documents to be included in the applications.

145 Article 3(1) of the Regulation refers to the products listed in the Annex to the Regulation, for which the use of the centralised procedure is compulsory.

146 Products developed by means of one of the biotechnological processes described in the Annex to the Regulation such as genetic engineering.

147 A medicinal product will be designated as orphan when the criteria of Article 3 of Regulation (EC) No 141/2000 are fulfilled, for example, where it can be established that it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition affecting not more than 5 in 10000 persons in the Community at the time of the application and there exists no satisfactory method of diagnosis, prevention or treatment authorised in the Community.

148 Those diseases are specified in the Annex to the Regulation.

149 Article 3 of the Regulation.

150 Article 3(3) of the Regulation provides that they may alternatively be authorised by the competent authorities of the Member States through a national, mutual recognition procedure or decentralised procedure provided that the conditions laid down in this provision are met. The possibility for generic products to use the centralised procedure has been introduced by Regulation N° 726/2004 (this possibility is also provided for in Directive 2004/27/EC of the European Parliament and of the Council of 31 March 2004 amending Directive 2001/83). Before the adoption of this regulation and directive, generic applications of original products could only be authorised by national procedures.

(255) *Procedure.* Applications for Community authorisation must be submitted to the EMEA[151]. Each application must be made in accordance with a specific format called the EU common technical document (CTD).[152] Information that must be included in any application comprises[153]: the name and the qualitative and quantitative particulars of all the constituents of the medicinal product, the manufacturing method, therapeutic indications, contra-indications and side-effects, method and route of administration, expected shelf life, precautionary and safety measures during storage and administration of the medicinal product and disposal of waste, the risk to the environment, the results of pharmaceutical, pre-clinical and clinical tests, a summary of the product characteristics and a mock-up of the packaging together with a package leaflet.[154]

(256) In cases where MA is requested for a generic product of a reference medicinal product which is or has been authorised for not less than eight years in a Member State or in the Community, the applicant is not requested to provide the results of the pre-clinical tests and clinical trials.[155] In such cases, the applicant can file a so-called abridged application in which it must be established that the generic product is composed of the same substances – in qualitative and quantitative terms – and has the same pharmaceutical form as the reference medicinal product previously authorised (bioequivalence). Under these conditions, the applicant can simply refer to the tests and trials for the reference product (confidential information filed by the manufacturer of the original product when seeking MA for its product).[156] The provisions described

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151 The European Medicines Agency based in London. Prior to the existence of the EMEA, the "European Agency for the Evaluation of Medicinal Products" was entrusted with the authorisation and supervision of medicinal products in accordance with Regulation (EEC) N°2309/93.

152 This requirement is applicable since 1 July 2003. It is also applicable for national procedures and is outlined in the Notice to Applicants, Vol B2: http://ec.europa.eu/enterprise/pharmaceuticals/eudralex/vol-2/b/update_200805/ctd_05-2008.pdf.

153 Pursuant to Article 6 of the Regulation, particulars and documents which have to be included in the application are set out in Articles 8(3), 10, 10a, 10 b or 11 of and Annex I to the Directive.

154 Applicants have the opportunity to hold "pre-submission meetings" with the EMEA: at least seven months before submission, applicants should notify their intention to submit an application and give an estimate of the month of submission. In practice, the date and time of delivery of the dossier to the EMEA should be arranged in advance in relation to the programme of scheduled meetings of the Committee for Medicinal Products for Human Use (CHMP).

155 This possibility is provided for in Article 10 (1) of the Directive, to which Article 6 of the Regulation refers, following up its amendment by Directive 2004/27. Paragraphs 3 and 4 of Article 10 of the Directive specify cases in which the results of pre-clinical tests or clinical trials will have to be provided by the generic producer: this is in particular the case where the bioequivalence of the generic product cannot be demonstrated through bioavailability studies or where a biological medicinal product which is similar to a reference biological medicinal product present differences relating to raw materials or in manufacturing processes. Before the entry into force of Directive 2004/27, the possibility for the applicant not to provide the results of the trials existed under different conditions. One of the differences relates to the provisions on data exclusivity as explained below. See also Article 14(11) of the Regulation.

156 The rules on data exclusivity do not prevent the producer of a generic product to file an application for MA before the end of the eight-year period of data exclusivity but, in such a case, he is not authorised to

hereafter on data and marketing exclusivity apply to applications filed in the framework of the centralised procedure as well as to applications filed in the framework of national authorisations procedures.

(257) *Data exclusivity*[157] *and marketing exclusivity for marketing authorisation applications submitted after 20 November 2005*[158]: For such applications, an abridged application is possible after the eight-year period of data exclusivity granted by law to the holder of the original MA for the data relating to pre-clinical tests and clinical trials has elapsed.[159] This period starts running from the date of MA for the original product. This data exclusivity period of eight years is the result of a harmonisation process across the EU in respect of products for which marketing authorisation requests have been filed after November 2005.

(258) In parallel with the provisions on data exclusivity, the harmonised rules also provide that the original MA holder benefits from a ten-year period of marketing exclusivity for the original product.[160] This means that a generic product authorised on the basis of an abridged application cannot be placed on the market until ten years have elapsed from the MA for the reference product. When the ten-year period of marketing exclusivity has elapsed, the generic product can be launched on the market, provided that no new therapeutic indication with a significant clinical benefit has been approved for the reference product during the first eight years following the MA. If there is such an approval, the reference product obtains a non-cumulative period of one year of additional marketing exclusivity.

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use the abridged procedure and has to provide the results of the pre-clinical tests and clinical trials. However, the original MA holder benefits from a de facto protection which stems from the fact that other stakeholders consider it uneconomical to repeat the extensive trials and tests which would be needed for obtaining MA for the competing product.

157 Sometimes also called "data protection".

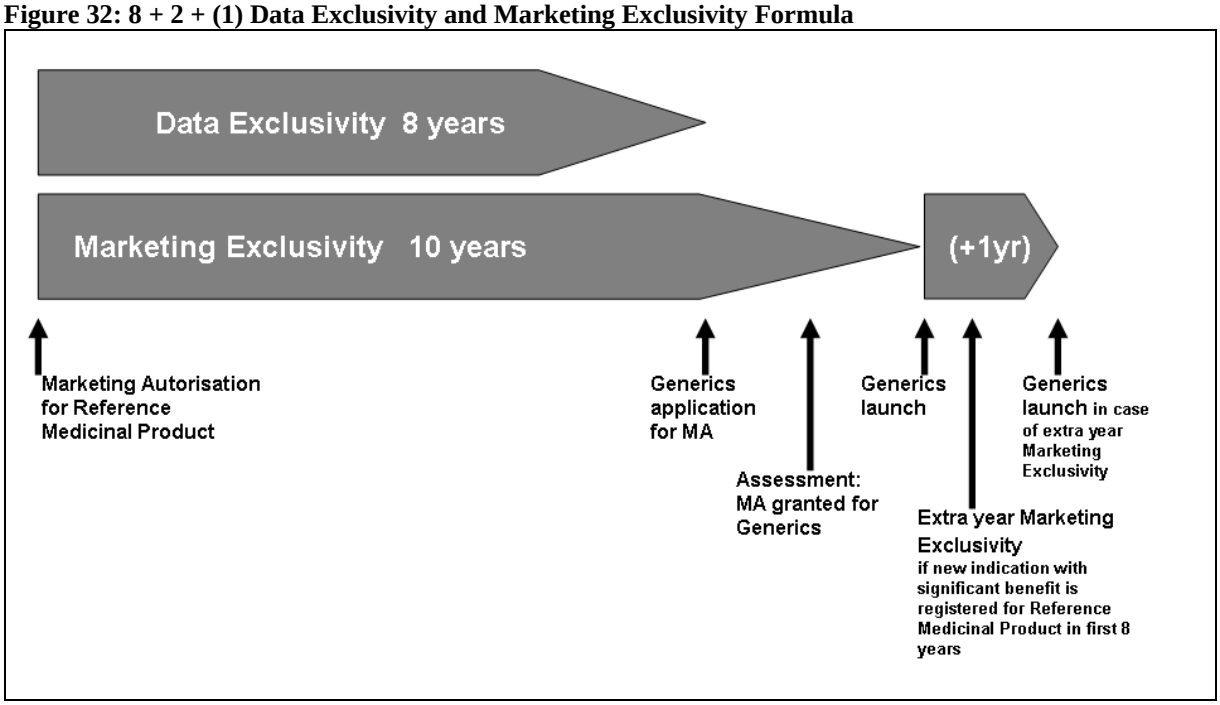
158 Directive 2004/27/EC amending Directive 2001/83/EC, and Regulation 726/2004 have introduced new rules concerning the data and marketing exclusivity periods and harmonised those rules across the EU. Pursuant to Article 89 of the Regulation, the new periods of protection do not apply to those reference medicinal products for which the initial application based on the Regulation was submitted before 20 November 2005. However, Article 2 of Directive 2004/27/EC states that the new period of protection does not apply to those reference medicinal products for which an application for authorisation was submitted before the date of transposition referred to in Article 3 of the same text i.e. 30 October 2005: Therefore for applications filed in the framework of national authorisation procedures, 30 October 2005 should hereafter be taken into account instead of 20 November 2005.

159 For further details see Article 10 of the Directive and Article 14(11) of the Regulation.

160 Marketing exclusivity is foreseen in Article 10 of the Directive and in Article 14(11) of the Regulation.

(259) The following graph summarises the harmonised provisions on data and marketing exclusivity:

Figure 32: 8 + 2 + (1) Data Exclusivity and Marketing Exclusivity Formula



Source: Pharmaceutical Sector Inquiry

(260) Apart from the possibility to file for abridged applications after expiry of the eight-year data exclusivity period, it is important to note that generic producers are permitted to conduct the necessary studies and trials with a view to obtaining MA for their products. As long as these activities are strictly necessary to prepare for an MA application, they are not deemed to infringe patents rights or SPCs for medicinal products in view of the so-called Bolar provision[161]. This provision, which was introduced by Directive 2004/27, creates a safe harbour for certain tests and studies while the reference product is still patent-protected so as to enable the generic producer to apply for marketing authorisation once the eight-year period of data exclusivity granted to the holder of the original MA has elapsed.

(261) *Data exclusivity and marketing exclusivity for marketing authorisation applications submitted before 20 November 2005*: Considering the time scope of the sector inquiry (period 2000 to 2007) and the fact that the current rules as described above apply only for marketing authorisation applications made after 20 November 2005, the system of protection existing before the adoption of the new rules is also described hereafter.

(262) Products for which the initial application was made before the entry into force of the new rules continue to benefit from the previous period of protection of 6 or 10 years depending on the Member State and whether the product has been authorised through

[161] Article 10(6) of the Directive as amended by Directive 2004/27/EC, to which the Regulation refers.

centralised procedure or national procedure.[162] In practice, for products authorised through national procedures, the periods of protection vary between countries[163]. Medicinal products which have been authorised through the centralised procedure benefit from a ten-year period of protection[164]. The effect of this protection period amounts to a combination of what is described under the current rules as "data exclusivity" and "marketing exclusivity": the generic applicant has to wait for expiry of the protection period of – depending on the MS – either 6 or 10 years which has been granted to the original MA holder before the application for marketing authorisation can be filed.

(263) On the basis of the above, in relation to the MA applications filed up to 20 November 2005, the protection period is referred to as "data exclusivity" in this report. However, in relation to MA applications filed after 20 November 2005, "data exclusivity" is referred to as the eight-year protection period after which generic applicants may refer to the information of the original MA holder and "marketing exclusivity" is referred to as the ten-year period from the initial authorisation after which generic products authorised in this way can be placed on the market.

(264) It is important to note that the provisions on data exclusivity apply in parallel with provisions on patents/SPCs described in the previous section. Accordingly, pharmaceutical products can be protected against generic competition in two ways: through patents/SPCs or through data exclusivity (and marketing exclusivity); and the "loss of exclusivity" (sometimes also referred to as "LoE") occurs, when both forms of protection expire.

(265) The following table shows by way of example how the LoE works in practice in cases where a marketing authorisation application has been filed before 20 November 2005 and where the data exclusivity period in the Member States concerned was ten years. It should however be noted that the results would be comparable on the basis of the new rules as the period of marketing exclusivity protecting the original MA holder is ten years[165]:

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162 For further details see Article 10 of Directive 2001/83/EC.

163 Ten years for national authorisations granted by: Belgium, Germany, France, Italy, the Netherlands, Sweden, the UK and Luxemburg and six years for national authorisations granted by: Austria, Denmark, Finland, Ireland, Portugal, Spain, Greece, Poland, the Czech Republic, Hungary, Lithuania, Latvia, Slovenia, Slovakia, Malta, Estonia, Cyprus, and also Norway, Liechtenstein and Iceland.

164 For further details see Article 13(4) of Regulation (EEC) No 2309/93, replaced in 2004 by the Regulation.

165 As stated earlier, if a new indication with a significant benefit is registered for the RMP in the first eight years, one additional year of marketing exclusivity will be granted to the original MA holder.

Box: Loss of exclusivity in practice

Patent application = 1985 Patent expiry = 2005 (20 years later)

- If first marketing authorisation in EU = 1990

=> 15 years patent protection, no SPC protection. Total protection = 15 years. Protection ends with patent expiry in 2005.

=> 10 years data exclusivity ending in 2000

LoE in 2005 with patent expiry

- If first marketing authorisation in EU = 1998

=> 7 years patent protection + 5 years SPC protection. Total protection = 12 years. Protection ends in 2010.

=> 10 years data exclusivity ending in 2008.

LoE in 2010 with SPC expiry

- If first marketing authorisation in EU = 2001

=> 4 years patent protection + 5 years SPC protection. Total protection = 9 years. Protection ends in 2010.

=> 10 years data exclusivity ending in 2011

LoE in 2011 with end of data exclusivity

(266) *Opinion of the CHMP and decisi*on. Within the EMEA, the Committee for Medicinal Products for Human Use (CHMP) is responsible for drawing up the opinion of the EMEA on whether or not MA can be granted. In order to prepare its opinion, the CHMP will examine whether the product concerned meets the necessary quality, safety and efficacy requirements.[166] It is interesting to note that the members of the CHMP are national experts appointed by the competent national authorities. Based on the qualifications of those experts and their expression of interest in relation to a specific file, the CHMP will appoint a rapporteur and if appropriate a co-rapporteur. The scientific evaluation of the application will therefore in practice be carried out by those national experts who will prepare an assessment report with the administrative

[166] The CHMP will first examine the eligibility of the application for evaluation via the centralised procedure.

support of the EMEA.[167] If the opinion is unfavourable, the possibility exists for the applicant to request the EMEA to re-examine the application before a final opinion is issued. All final opinions of the CHMP (positive or negative) are published on the EMEA website.

(267) The opinion will then be sent to the European Commission, which takes the final decision after consulting the Member States and informing the applicant. The decision can deviate from the opinion of the CHMP, but in this case the Commission must state in detail the reasons for the deviation. A decision granting MA, which is the norm after a favourable opinion by the CHMP, contains the summary of the product characteristics along with the labelling and package leaflet.[168]

(268) Under the centralised procedure, applications are made in English[169]. However, after the adoption of the opinion of the CHMP, the applicant must provide the EMEA with translations of the summary of the product characteristics, the conditions of the MA, the labelling and the package leaflet in all EU official languages.[170]

(269) The standard timetable for the scientific evaluation of a centralised application allows 210 days for the adoption of the CHMP opinion[171] starting from the date of receipt of a valid application. This time limit can be suspended if the applicant is required by the CHMP to provide supplementary information. Within 15 days after receipt of the opinion, the Commission shall prepare a draft of the decision. The final decision will be taken within 15 days after the end of the consultation with the Member States.

(270) The basic fee for MA to be paid by the applicant is € 242,600. In addition, the MA holder has to pay an annual fee of € 87,000 covering the costs connected with the

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167 It is in particular stipulated that the members of the CHMP and experts responsible for the evaluation of applications rely on the scientific evaluation and resources made available by national competent authorities and the EMEA (see Rules of Procedure for the CHMP, Article 6).

168 It should be noted that the marketing authorisation granted is global: this means that it contains the initial authorisation and all variations and extensions thereof, as well as any additional strengths, pharmaceutical forms, administration routes or presentations authorised through separate procedures and under a different name, granted to the holder of the initial marketing authorisation. In accordance with Article 6(1) of the Directive, all these presentations of a given product are to be considered as part of the same marketing authorisation for the purposes of applying the rules on data and marketing exclusivity.

169 See Eudralex – Volume 2 - Pharmaceutical Legislation – Notice to applicants, Vol 2A, Chapter 7 General Information, p. 6: http://ec.europa.eu/enterprise/pharmaceuticals/eudralex/vol-2/a/vol2a_chap7_2007-07.pdf

170 Those documents will be annexed to the Commission Decision.

171 An accelerated assessment may be requested in the case of medicinal products which are of major interest from the point of view of public health and in particular from the viewpoint of therapeutic innovation.

supervision of the authorised medicinal product.[172] In the case of an abridged application, the basic fee is reduced to € 94,100 and the annual fee to € 21,700.

(271) *Effects of Community authorisation.* Once MA is granted under the centralised procedure, the medicinal product may be put on the market in all EU Member States. The MA has an initial duration of five years and may be renewed on the basis of a re-evaluation of the risk-benefit balance upon application by the holder at least six months before expiry of the five-year period.[173] Any authorisation which is not followed by an actual placing on the market of the authorised product within three years of being granted will cease to be valid. The same applies to an authorised product previously placed on the market which is absent from the market for a period of three consecutive years.

(272) It is important to note that generic companies can rely on the previously granted MA for the reference product even if MA for the reference product is withdrawn.[174]

2.2.2. National Authorisation Procedure at Member State Level – Mutual Recognition Procedure (MRP) and Decentralised Procedure (DCP)

(273) Existing national procedures in the Member States have been harmonised to a considerable degree by Directive 2001/83 (the "Directive").[175] The substantive test carried out for the granting of MA on the basis of the centralised procedure and on the basis of the national procedure is identical: each MA decision is taken on the basis of scientific criteria concerning the quality, safety and efficacy of the medicinal product concerned. The arrangements described above in relation to the centralised procedure such as the so-called abridged procedure, data and marketing exclusivity, duration of authorisation and possible renewal and withdrawal, are also provided for in the Directive. In addition, the Directive contains the provisions covering the MRP and the DCP[176].

(274) With the exception of medicinal products subject to the centralised procedure, the MRP and DCP procedures must be used in relation to applications for MA for

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172 The annual fee has been introduced to cover the costs connected with the supervision of authorised medicinal products and maintenance of the MA: the MA holder has to pay the fee each year starting from the first anniversary of the MA.

173 Pursuant to Article 14 of the Regulation, once renewed, the MA will normally be valid for an unlimited period unless it is decided to proceed, on justified grounds relating to pharmacovigilance, with one additional five-year renewal.

174 Article 10(1) of the Directive as amended by Directive 2004/27/EC. This was questionable under the old legislation and created the potential for abuse

175 Article 17 provides in particular that Member States will take the appropriate measures to ensure that the procedure for granting a marketing authorisation for medicinal products is completed within a maximum of 210 days after the submission of a valid application.

176 The DCP has been introduced by Directive 2004/27/EC.

medicinal products in more than one Member State. In such cases, the applicant must submit an application to the competent authorities of each of the Member States where MA is sought. The application is based on an identical dossier containing the same information and particulars as for the centralised procedure[177] and a list of the Member States concerned by the application.

(275) *Mutual recognition procedure.* Where a medicinal product has already received MA at the time of the application in a given Member State (hereinafter the Reference Member State or RMS), the other Member States concerned will, in principle, recognise the MA granted by the RMS by approving the assessment report, the summary of the product characteristics, the labelling and package leaflet and grant MA with a harmonised summary of the product characteristics, package leaflet and labelling.[178]

(276) If a Member State cannot approve the assessment report, the summary of the product characteristics, the labelling and the package leaflet on the grounds of potential serious risk to public health, the points of disagreement are referred to the coordination group. If, within the coordination group, the Member States fail to reach agreement on the action to be taken, the Commission takes, following the opinion of the CHMP, the decision addressed to all Member States and reported for information to marketing authorisation holder or applicant.

(277) *Decentralised procedure.* In cases where a medicinal product has not been granted MA at the time of the application, the RMS will prepare the draft assessment report on the medicinal product which will be sent to the Member States concerned and to the applicant together with the draft summary of the product characteristics, and the draft of the labelling and package leaflet. The RMS will act as central point for the Member States concerned and the applicant. The other Member States concerned will, in principle, approve the assessment report, the summary of the product characteristics, the labelling and package leaflet and grant MA in accordance with the approved assessment report, the summary of the product characteristics, package leaflet and labelling as approved. The procedure for resolving dissents is the same as for the MRP.

2.2.3. Patent Linkage

(278) Patent linkage refers to the practice of linking the granting of MA, the pricing and reimbursement status or any regulatory approval for a generic medicinal product, to the status of a patent (application) for the originator reference product. Under EU law, it is not allowed to link marketing authorisation to the patent status of the originator reference product. Article 81 of the Regulation and Article 126 of the Directive provide that authorisation to market a medicinal product shall not be refused,

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177 Information and particulars referred to in Articles 8, 10, 10a, 10b and 10c of the Directive.

178 The procedure is described in Article 28 of the Directive.

suspended or revoked except on the grounds set out in the Regulation[179] and the Directive. Since the status of a patent (application) is not included in the grounds set out in the Regulation and in the Directive, it cannot be used as an argument for refusing, suspending or revoking MA.[180]

Summary

In order to maintain public health standards, marketing authorisation procedures verify that medicines are safe, effective and of good quality. Detailed results of (pre-) clinical tests and trials must be submitted for a new medicine. Generic medicines also require marketing authorisations, but applications need not resubmit detailed trial results, if it is shown that the generic product is equivalent to a medicine previously authorised. However abridged applications of this kind are only permitted once the originator company's data relating to the (pre-) clinical tests and trials is no longer protected.

Marketing authorisation procedures are regulated by EU law. There is a centralised application procedure leading to authorisation for the entire EU or national procedures which result in national authorisations that can benefit from mutual recognition in other Member States.

179 See also Article 68 of Regulation (EEC) 2309/93 which has been replaced by Article 81 of the Regulation.

180 See however the findings set out in Chapter C.2.5. of this report.

2.3. Pricing and Reimbursement

(279) Prices and reimbursement levels for medicines are a national competence dealt with by each EU Member State on a national or regional level. As a consequence, pricing and reimbursement policies vary significantly within the EU.

(280) Nevertheless, EU Member States share three common objectives: (1) they want to ensure that their patients in need have access to the necessary medicines; (2) they want to ensure that health budgets remain under control to ensure sustainability of the health system (short and long term); and (3) they want to create/maintain incentives for further innovation. Each Member State decides which weight it gives to each of these objectives. The national balancing exercise will depend on factors such as available resources or health needs of the population. It might also depend on political priorities, such as the structure of the pharmaceutical industry in the Member State (significant R&D activities, strong generic industry).

(281) In spite of the national competence, all Member States must ensure that any national measure to control the prices of medicinal products or to restrict the range of medicinal products covered by their national health insurance systems complies with the requirements of Directive 89/105/EEC[181] (the "Transparency Directive") and the EC Treaty. This legal framework requires in particular that pricing and reimbursement decisions are taken in a transparent manner, i.e. within clear timelines, on the basis of objective and verifiable criteria, with a statement of reasons and with a public communication and with an opportunity to appeal.

(282) Although taken at national level, it needs to be noted from the outset that the pricing and reimbursement decisions of an individual Member State also influence those of other EU Member States, in particular through practices such as cross-border price comparisons (cross-border reference pricing) or trade between Member States.

(283) For the purpose of this report, it was considered appropriate to focus on pricing and reimbursement of medicines that are supplied through retail pharmacies, i.e. outside of hospitals. The usual price-setting mechanisms for medicines sold to hospitals differ significantly from those applied in the retail segment. Hospital pharmacies most often negotiate prices directly with manufacturers, often through tendering procedures or within the context of risk-sharing agreements[182].

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181 Directive 89/105/EEC of the Council of 21 December 1998 relating to the transparency of measures regulating the process of medicinal products for human use and their inclusion in the scope of national insurance systems (OJ L 40, 11.2.19689, pp. 8-11)

182 Risk-sharing practices allow hospitals to use highly innovative and very expensive medicines without fully proven value. Hospital funding of these medicines will depend on the clinical outcome.

2.3.1. Factors Considered when Setting Prices for Medicines

(284) In general, national pricing policies consider three key factors:

(a) The price level ex-factory, which determines the main cost factor for the medicine. To arrive at the retail price level, the margins for the wholesalers and pharmacists as well as the VAT are added.

(b) The reimbursement level, expressed as a percentage of the retail price. This will determine how much of the retail price is paid by public funds. The remaining part, also referred to as co-payment, is paid by the patient or his private supplementary insurance. The reimbursement level can often be decisive for the question whether a medicine is accessible to the patient (group) concerned.[183]

(c) (Potential) restrictions on stakeholders such as doctors or pharmacists, which will determine how often and under what conditions a medicine can be prescribed, dispensed and used.

(285) These three issues are often considered jointly when a decision on the price level for a medicine is taken. They allow the authorities to control the overall budget per medicine, which is mathematically defined as: (a) price per medicine at retail level × (b) reimbursement level in % × (c) volume of medicines used. In some cases, authorities and companies agree immediately on an overall budget, instead of the three separate factors.

(286) Member States adopt a long list of practices that affect pricing decisions. There are practices focusing on (a) prices and/or (b) reimbursement levels, which are generally referred to as "supply side practices". And there are practices focusing on (c) use of the medicine called "demand side practices". Some policies combine supply- and demand-side practices. The most important practices are summarised below.

(287) It is however important to note here that the pricing landscape is dynamic. Member States continuously evaluate the outcomes of their decisions and take action where necessary. For a good snapshot of the 2006 landscape, reference is made to study "Analysis of differences and commonalities in pricing and reimbursement systems in Europe" developed on the sidelines of the Working Group Pricing of the Pharmaceutical Forum by the Andalusian School of Public Health (see also Table 13 and Table 14). In addition the Austrian Federal Institute for Health (Österreichisches Bundesinstitut für Gesuntheitswesen, ÖBIG) prepared a study for DG Competition in 2006 entitled: “Surveying, Assessing and Analysing the Pharmaceutical Sector in the 25 EU Member States”.

[183] Authorities therefore often foresee higher reimbursement, or lower co-payment, to chronically ill or socially disfavoured patients. The higher the co-payment, the lower the expected demand, as patients will choose for products with a limited co-payment whenever possible.

2.3.2. Supply-Side Practices

Initial Pricing and Reimbursement Decisions

(288) Most Member States apply a direct control on the initial price of reimbursed medicines. Only Denmark, Germany, Malta, Sweden and the UK were reported to allow companies to freely set their initial price levels (state of play: 2006). Nevertheless, in several of these so-called free-price countries, medicines will only be reimbursed up to a certain amount or on condition that the price is considered acceptable. In practice, this strongly influences the price a company chooses to offer. Hence reimbursement conditions often create an indirect price control.

(289) In order to determine the price and reimbursement level of a new medicine, an increasing number of Member States try to understand the clinical performance and/or the economic impact of a medicine. They therefore perform specific assessments (commonly referred to as health technology assessments) and compare the requested price to the added value that the medicine brings.

(290) Many Member States also compare the requested price to the prices of the same medicine in a selection of other countries. This is called cross-border referencing and works with a so-called basket of reference countries[184] (this method raises the question, however, whether the reference prices are actual prices taking into account additional measures, see next section). As a consequence, prices set in one country can create a point of reference for subsequent price negotiations elsewhere in the EU. Producers of pharmaceutical products take this into account when they apply for pricing, as an originator company observed:

"[…] most manufacturers put in place launch strategies to minimise the negative impact of reference pricing systems on the average selling price of their products across Europe."

(291) Many originator companies confirmed during the sector inquiry that pharmaceutical companies aim at marketing their products as soon as possible. However, it can be observed that products are often marketed first in the larger EU Member States. Many originator companies reported that traditionally the UK and Germany are amongst the early launch countries as they allow companies to freely set prices without prior price approval. In particular in Germany, this usually results in a relatively high price, and hence a relatively high point of reference for cross-border referencing.

(292) In addition, originator companies reported that in France, Italy, the Netherlands and Sweden, they may submit a pricing and reimbursement dossier before the marketing authorisation is officially granted. In these countries, the only condition is a positive CHMP (Committee for Human Medicinal Products at the EMEA)[185] opinion. In most

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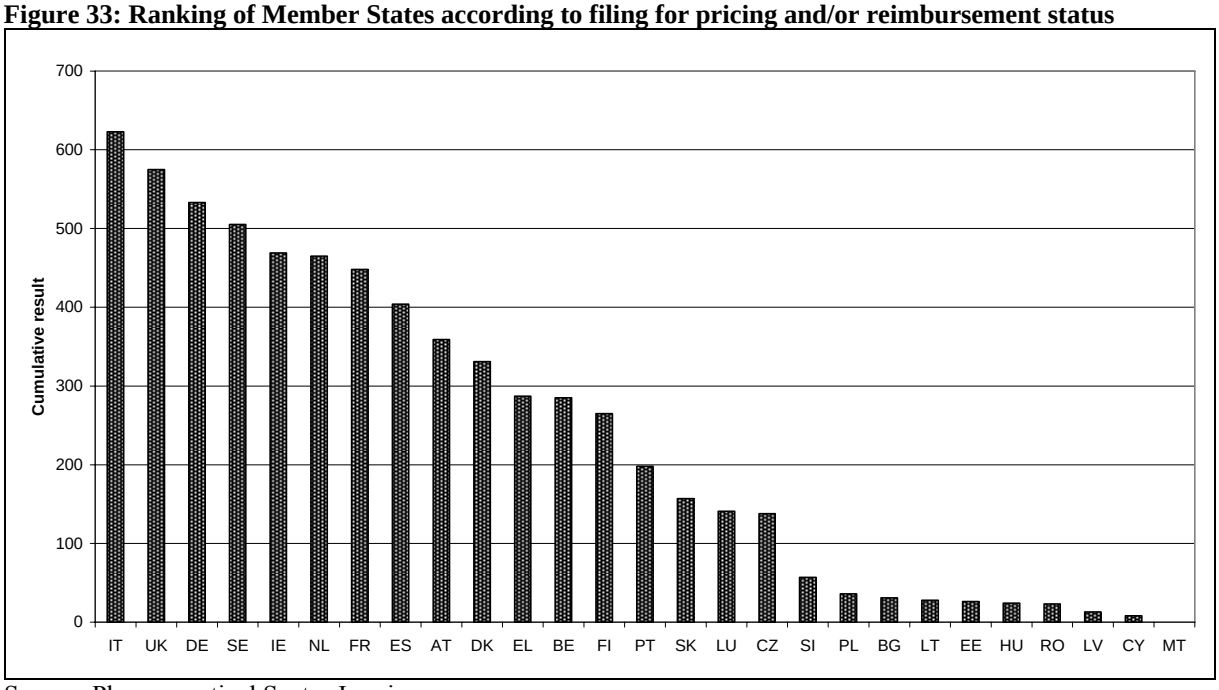
184 This basket is different for each country, and is often defined in the national legislation.

185 For further details on CHMP, please refer to Chapter B.2.2.

other Member States, a submission for pricing and/or reimbursement can only be made after the marketing authorisation has been granted.

(293) The importance of reference pricing for the considerations of originator companies where to launch first a product as explained above is confirmed by the data that was gathered during the sector inquiry. Figure 33 provides an overview of the EU Member States ranked according to their popularity amongst companies to apply early for a pricing and/or reimbursement status. As can be seen, some of the free-price countries (United Kingdom, Germany, Sweden) and/or the countries with so-called positive CHMP opinion (Italy and Sweden) form the top four countries to start a pricing and/or reimbursement application when taking into account the reference pricing system that many other Member States apply.

Figure 33: Ranking of Member States according to filing for pricing and/or reimbursement status



Source: Pharmaceutical Sector Inquiry

Note: The ranking above is based on respondent companies' replies to the question which requested them to provide information on the first five most recently launched INNs and to order chronologically the first ten EU27 Member States in which they approached the pricing/reimbursement body. In constructing the ranking, a Member State to which the pricing/reimbursement body a company had turned to first received 10 points, second 9 points, third 8 points, and so forth.

(294) Figure 33 also shows that countries with small markets (Cyprus, Malta) and countries with less per capita purchasing power (Poland, Bulgaria, Lithuania, Latvia, Estonia, Hungary, Romania) are generally not taken as reference countries. Originator companies are reluctant to make first price applications in these last countries as a generally lower price level might lead to low prices elsewhere via cross-border referencing.

(295) Another comparison, which is often used by Member States (in particular for reimbursement levels), weighs the requested price for a new medicine against the price for medicines that have similar therapeutic effects and are already available (so-called therapeutic reference pricing: all medicines with a comparable therapeutic effect get the same reimbursement).

(296) Member States have stopped comparing the requested price with the cost of developing and producing the medicine (so-called cost-plus pricing). The necessary information to do so is very difficult to obtain and in the end this practice would reward inefficient developments at high cost.

(297) For generic medicines, two types of regimes exist for initial pricing and reimbursement; either there are no controls, then competition created by the growing number of generics is supposed to bring down prices; or the prices and reimbursement levels of the generics are set by legislation at a (minimum) level of X% below the price of the originator product (price-linkage).

(298) It needs to be noted that the price agreed between manufacturers and authorities will also influence prices for other actors in the supply chain in cases where the margins that wholesalers and pharmacists earn for distributing or retailing the medicine are defined as a fraction/percentage of the price agreed upon with the manufacturer.[186]

Additional Pricing and Reimbursement Measures

(299) The initial price and reimbursement decisions are often subject to subsequent measures. For example it is common practice to negotiate discounts and/or rebates between the companies and the authorities or other funding parties (e.g. mutual insurance schemes). Such discounts and rebates can bring the real price significantly under the official price. As these agreements tend to be confidential, the general public or authorities in other Member States are not informed about the magnitude of these discounts and/or rebates.

(300) Although they are strictly speaking not part of the pricing/reimbursement decisions, payback and/or price-volume agreements can significantly reduce the overall spending and thus the ultimate price per medicine. In payback agreements companies agree to refund (part of) the revenue earned above a pre-agreed budget. In price-volume agreements, companies agree to charge lower prices once certain pre-agreed volume thresholds are exceeded.[187] Finally, there are profit-control[188] agreements in some Member States. In such agreements companies refund (part of) the profit earned above a pre-agreed limit. Competent authorities of Member States are usually not informed or aware about all these additional pricing and reimbursement interventions in other Member States. This significantly complicates and reduces the value of cross-border reference pricing.

(301) An overview of supply side practices is given in the table below.

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[186] Price competition at the wholesale level takes place in many Member States: wholesalers need to offer discounts to pharmacists to retain their customers. Price competition at the retail level seems more limited even in situations where only maximum prices are set.

[187] For example, in 2006 payback was reported in Belgium, France, Hungary, Italy, Portugal, Romania and the United Kingdom. Price-volume agreements were reported in 2006 in Estonia, France, Hungary, Latvia, Portugal, Sweden and Slovakia.

[188] For example, in 2006 profit control was reported in Portugal, Romania and the United Kingdom.

Table 13: Overview of supply-side practices in EU Member States in 2006

	Free pricing	Assessment of Clinical performance	Economic evaluation	Compare to cost of existing treatments	Cross-border price comparisons	Cost plus calculations	Discounts/ rebates	Price freezes/cuts	Payback	Price-Volume agreements	Profit control
AT		V	V	V	V		V				
BE		V	V	V	V			V	V		
CY					V						
DE	V						V				
DK	V										
EE			V	V	V					V	
EL					V	V	V	V			
ES		V		V	V	V	V	V			
FI		V	V	V	V			V			
FR		V		V	V		V	V	V	V	
HU				V	V		V		V	V	
IE		V	V	V	V		V	V			
IT		V	V	V			V	V	V		V
LT					V						
LV		V	V	V						V	
MT	V										
NL					V			V			
PL		V			V						
PT		V	V	V	V			V	V	V	
RO					V		V		V		V
SE	V		V							V	
SK		V	V		V					V	V
SI			V		V						
UK	V							V	V		V
	Initial pricing and reimbursement						Additional pricing and reimbursement measures				

Source: 2006 Survey, with EU Member States representatives in the Pharmaceutical Forum, Andalusian School of Public Health[189]

[189] Regarding Sweden, pricing is free for prescription medicines but only the medicine is not included in the reimbursement system. However, almost all prescription medicines are included in the reimbursement system. Note that currently a clinical assessment and the comparison of costs of existing treatment are necessary in an economic evaluation. Price-volume agreements do not exist for out-patient medicines.

2.3.3. Demand-Side Practices

(302) Three actors decide on the demand for and utilisation of a medicine: the doctor who prescribes it, the pharmacist who dispenses it and the patient who needs it. To steer the decisions of these three actors, authorities often apply a set of demand-side practices.

Practices Targeted at Prescribing Doctors

(303) Almost all Member States develop guidelines and inform doctors on efficient prescribing practices. Some Member States go further and make some prescribing behaviour mandatory, e.g. to prescribe an active substance (INN) rather than a brand, once generic versions are available. This will allow the pharmacist to choose the cheapest version/brand available with this active substance (unless there is a medical necessity for a specific product).

(304) In some countries individual prescribing behaviour is monitored and rewarded, e.g. doctors are asked to respect a budget or a prescribe quota or target percentage of cheaper medicines and can get a financial bonus if they respect this budget, quota or target. Steering the prescribing behaviour of a doctor is considered to be particularly relevant when the doctor has the choice between medicines of competing originator companies.

(305) For some more expensive products, authorities will establish strict criteria and conditions of use. As a consequence, doctors might have to organise additional diagnostic testing and/or administration, before being allowed to prescribe these expensive products.

Practices Targeted at Dispensing Pharmacists

(306) Pharmacists can have a significant impact on the cost of treating certain diseases when they are entitled to substitute a medicine with a cheaper (i.e. often a generic) version. Some Member States explicitly lay down this right for pharmacies in their legislation. In this case, pharmacists will make substitutions if they are incentivised to do so either by being able to make bigger margins or because of their regulated tariff structures. Others go further and make it mandatory for pharmacies to substitute. In such cases the pharmacies must dispense the cheapest version of the active substance available.

(307) To fully promote cost-awareness, Member States often align the financial incentives for pharmacies so that it becomes attractive to dispense a cheaper generic version. At the very least dispensing a cheaper version should not bring financial disadvantages (which would be the case if a pharmacist is exclusively paid by receiving a fixed percentage of the retail price). A few Member States count on market dynamics and make pharmacists negotiate for lower prices with their suppliers, by claiming back part of the expected savings (so-called claw-back). Steering the dispensing behaviour of pharmacists is considered to be particularly relevant when there is a choice between different generic versions available.

Practices Targeted at Patients

(308) As long as public budgets cover the full costs of medicines, patients will not be cost-sensitive. Most Member States therefore ask patients to bear part of the costs of medicines, through co-payment or other forms of cost sharing.[190] In certain Member States therapeutic reference pricing is introduced, which allows patients to obtain one product free of co-payment. If the patient nevertheless opts for another more expensive medicine, he/she will have to pay the difference. Many Member States have organised information campaigns for patients in order to educate and potentially steer their use of pharmaceuticals, e.g. to use less antibiotics and/or more generics.

2.3.4. Policies Combining Supply- and Demand-Side Practices

(309) To control costs effectively, pricing policies need to include supply-side as well as demand-side practices. Supply-side practices should ensure that medicines are available at relatively low prices. Demand-side practices should then ensure that the lower-priced medicines are used most frequently. Without a combination of these practices, it can often be observed that utilisation/demand shifts away from the cheapest medicine supplied towards more expensive alternatives, which in the end will not allow expenditure to be controlled.

(310) The combination of demand- and supply-side practices is a concept often found in generic policies, e.g. through a reference price practice. By limiting and equalizing reimbursement for similar medicines, this practice combines on the supply side an incentive for companies to lower their prices, with on the demand side a financial incentive for patients to choose the cheapest alternative. Stimulating parallel imports is another example, where pharmacists are financially incentivised and sometimes even legally obliged to dispense medicines that are obtained at reduced prices.

(311) An overview of demand-side practices is given in the table below.

[190] Cyprus, France, Malta and Slovenia were reported as only exceptions in 2006.

Table 14: Overview of demand-side practices in EU Member States in 2006

	Prescription guidelines	Education and information	Monitoring of prescriptions	Prescription quotas	Pharmaceutical budgets	Financial incentives	(Generic) substitution	Financial incentives	Claw-back	Information / education	Cost-sharing
AT	V	V	V			V			V	V	V
BE	V	V	V	V		V			V	V	V
CY							V				
DE	V	V	V	V		V	V			V	V
DK	V	V	V				V			V	V
EE	V	V								V	V
EL			V								V
ES	V	V	V	V	V	V	V			V	V
FI	V	V	V				V			V	V
FR	V	V	V				V	V		V	
HU	V		V				V				V
IE		V	V					V		V	V
IT	V	V	V				V	V	V	V	V
LT	V										V
LV	V		V	V	V		V				V
MT	V						V				
NL	V	V	V			V	V	V	V	V	V
PL		V					V		V	V	V
PT	V	V	V				V			V	V
RO		V	V		V		V			V	V
SE	V	V	V		V	V	V			V	V
SK	V	V	V				V			V	V
SI	V	V	V				V				
UK	V	V	V		V	V		V	V	V	V
	Prescribing doctors						Dispensing pharmacists			Patients	

Source: 2006 Survey, with EU Member States representatives in the Pharmaceutical Forum, Andalusian School of Public Health

Box: Comparison between the Dutch preference policy and German rebate contracts

Two new practices by Dutch and German health insurers were reported to have been rather successful in bringing down prices of off-patent products, but also led to significant controversies, including the involvement of the competition authorities.

Netherlands

Dutch law allows the health insurers to limit reimbursement for top-selling (off-patent) medicines to the cheapest suppliers during a certain period of time (preference policy). The selection of the suppliers follows the same logic as a tender process, where the bidder with the lowest price gets the contract. However the tender procedure differs between the insurers: some insurers not only contract with the company with the lowest bid, but use a price range of up to 5% allowing more than one preferred supplier (for example in order to ensure supply to the whole market). In return for the relatively low price the selected suppliers obtain exclusivity from the insurance company for a predetermined time period, typically six to twelve months, for the medicine concerned. The preference policy was originally implemented by all health insurers collectively on three widely sold products – so-called "collective preference policy". But since 1 June 2008 a total of 33 more products have been added by four major Dutch health insurers on an individual basis (one adding all 33 products, the others a selection of them) – the so-called "individual preference policy". Considerable price reductions were achieved through the preference policy. Stichting Farmaceutische Kengetallen reported the following decreases for the six top-selling products (price levels: pharmacy purchase price).

Product	Preferred supplier	Price in May	Price in June	Change
Omeprazol tablets/capsules 20 mg	Ratiopharm	€ 0.36	€ 0.05	-88%
Alendroninezuur tablets 70 mg	Centrafarm	€ 4.99	€ 0.36	-93%
Omeprazol tablets/capsules 40 mg	Centrafarm	€ 0.65	€ 0.09	-86%
Paroxetine tablets 20 mg	Ratiopharm	€ 0.37	€ 0.07	-82%
Simvastatine tablets 40 mg	Actavis	€ 0.27	€ 0.04	-84%
Pravastatine tablets 40 mg	Focus Pharma	€ 0.54	€ 0.13	-76%

The price reductions are estimated to lead to annual cost savings for the Dutch health system of between € 200 million and € 400 million. The savings result from the price reductions for the product concerned and expected substitution effects. It is also expected that non-selected suppliers will lower their prices to become attractive to those insurance companies that have not committed themselves under individual preferences for certain products. The preference policy has led to considerable controversy in the Netherlands. The Dutch association of generic producers tried to stop the health insurers from going ahead with the preference policy through national court proceedings claiming among other things that the policy is incompatible with competition law. The Dutch courts rejected this argument. In parallel the Commission sent the stakeholders concerned information requests in the context of the sector inquiry when it became aware that

insurers might be tempted to enter into an agreement with other stakeholders to waive their right to carry out preference policies in return for cost cuts. It remains to be seen how the significant cost savings are passed on to Dutch consumers. This can take the form of improved health care packages or reduced insurance premiums (which might mean in times of overall cost increases a slower increase in premiums).

Germany

In Germany, the statutory sickness insurance funds can award rebate contracts to mainly generic companies. These framework contracts specify the discounts that suppliers of pharmaceuticals give to the sickness funds for products subject to the tender. The scope of the contracts varies widely, because they can be concluded for specific active ingredients but also for entire product portfolios. Typically, the sickness insurance funds conclude contracts with three or four companies. The cost savings are achieved as pharmacies are obliged by law – as from April 2007 – to supply the patients insured with the respective health insurer only with products that are covered by discount contracts if available. According to press statements by the largest German sickness funds (AOK) covering approximately 40% of the total market, significant cost savings were expected on the basis of the two-year contracts tendered in summer 2007. In addition the need for co-payment by patients is expected to decrease. The German pharmaceutical industry has expressed concerns that the practice of discount contracts might not be compatible with European and national law. In particular, a breach of the rules governing public procurement and of competition law was claimed. With respect to the public procurement rules it was argued that European-wide tenders are required. In response the Commission launched infringement proceedings against Germany (IP/08/686), which can ultimately end up before the European Court of Justice (ECJ). With respect to competition law the matter is more complex, as the ECJ has expressed hesitations in other – non-related – cases as to whether the activities of public health insurers are an "economic" activity, a prerequisite for the application of European competition law.

In response to the criticism received, the AOK launched in August 2008 its third tender round concerning 64 generic substances. Therefore, rebate contracts become more important, since they cover now 46% of all consumption of medicines by the AOK. This time the rebate contracts were tendered EU wide. Moreover, a new element of this tender procedure was to divide Germany into 5 regions ("Gebietslose") where separate tenders are conducted. The regions were designed such as to cover similar numbers of insured in each region. Per substance and region one rebate contract with a single supplier of pharmaceuticals is envisaged. The contracts run for two years with an option to extend them for half a year. The division into independent regional tenders as well as the separate tender for each substance should enable also small generic companies to participate and win some of the tenders. Nevertheless, companies have to bid carefully, because the rebate contracts include clauses that punish the companies if they are unable to deliver the products for which they signed a contract.

Summary

In almost all Member States the pricing and reimbursement status of a prescription medicine must be determined before launch if funded under the social security system. The underlying objective is to maintain control over national health budgets.

A number of Member States apply policies supporting the sale of generic medicines by combining demand and supply side pricing practices, such as obliging pharmacists to always dispense the cheapest product. In certain Member States health insurers have recently become active in controlling prices for medicines, e.g. through tender procedures.

C. MAIN ISSUES INVESTIGATED

1. INNs, Products and Patents

(312) This section describes the sample of 219 INNs (pharmaceutically active molecules) selected for the in-depth investigation in the sector inquiry and on the related products. The second section gives information on patent applications, patent portfolios and patent life cycles, both in general and for the 219 INNs covered by the sector inquiry.

1.1. Products and INNs

(313) In this report medicines are referred to by their international non-proprietary name (INN), a public nomenclature overseen by the World Health Organisation (WHO). The INN is often known as a "generic name", which is not protected by trademarks and is used next to the brand name in the international medical community.[191]

(314) "Products" are defined as products for which a marketing authorisation has been granted and which are placed on the market. Different dosages or different forms of administration of the same prescription medicine have been considered as different products.

(315) For a number of issues relevant to the sector inquiry, stakeholders were asked to provide information on a sample of 219 INNs, which were selected as follows:[192]

- A first group of INNs was selected by taking, in three Member States (France, Germany and the United Kingdom), the 75 top-selling INNs that had faced loss of exclusivity (e.g. expiry of their patent, SPC, IP or data exclusivity) over the period from 2000 to 2007. In each Member State, this list of 75 INNs represented, in value terms, well over 90% of sales of all INNs that faced loss of exclusivity from 2000 to 2007. The list of the top 75 molecules in each of these three Member States were combined. This produced a final list of 128 INNs. This list is referred to as "E75". The INNs on this list were particularly relevant for gathering information on the originator/generic relationship.

- A second group of INNs contains the 50 top-selling INNs (whether protected or not) in each of the three above-mentioned Member States. This led to identification of a total of 90 INNs (of which 61 were not already on the E75-list). This list is referred to as "T50". These ensured that information on the most remunerative INNs would be collected in the inquiry.

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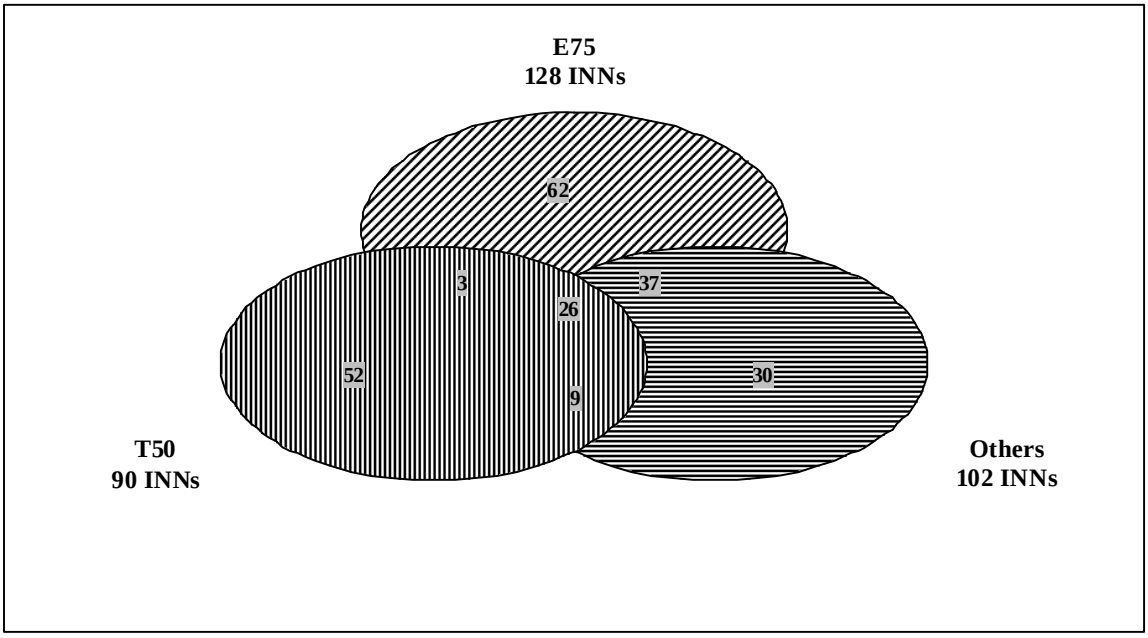
[191] For further information on INNs, see http://www.who.int/medicines/services/inn/en/.

[192] For further details see Annex Methodology and list of 219 INNs (Annexes to Chapter A).

- A third group of other INNs was selected by considering the 50 top-selling INNs which had faced (possible) first generic entry in each of the countries selected. This gave a total of 95 INNs (30 of which were new in comparison with the E75 and T50 lists). This group of INNs was also potentially relevant to the originator/generic relationship. Finally, the list contained some INNs that might be of interest in view of other market information available to the Commission.

(316) Figure 34 illustrates the overlap between the three universes. It indicates that 26 INNs were present in all three subgroups.

Figure 34: Overlap between investigated INNs universes



Source: Pharmaceutical Sector Inquiry

(317) This section will describe some broad characteristics of the sample of 219 INNs on which stakeholders were asked to provide information.

1.1.1. INNs in Relation to Companies and Products

(318) As indicated in Table 15, usable information on INNs and products was received from 43 originator companies and 24 (out of a total of 27) generic companies.

(319) Out of the 219 INNs considered, the originator companies were active on 215[193] and the generic companies on 216. On average in the period 2000 to 2007 the generic companies were active on 214 INNs per Member State and the originator companies on 161. Looking at the E75 list of INNs, in the period 2000 to 2007 the generic and the originator companies were, on average, active on 121 and 90 INNs per Member State

[193] Relevant information for this section was received on 215 INNs (out of the 219 investigated).

respectively. In the T50 universe, the generic and the originator companies were active on an average of 85 and 77 INNs per Member State respectively.[194] These averages hide substantial differences between Member States.

Table 15: Overview of INNs and companies

Company type	Number of companies analysed	Number of INNs on which companies were active (EU27)	Average number of INNs per MS (219 INNs)	Average number of INNs per MS (E75)	Average number of INNs per MS (T50)
Originator companies	43	215	161	90	77
Generic companies	24	216	214	121	85

Source: Pharmaceutical Sector Inquiry

(320) Figure 35 illustrates the average number of products per INN and per type of company in the E75 sample plus the number of originator and generic companies per INN. It is based on data concerning all the generic and originator[195] companies active in fifteen EU Member States[196] in the period 2000-2007.

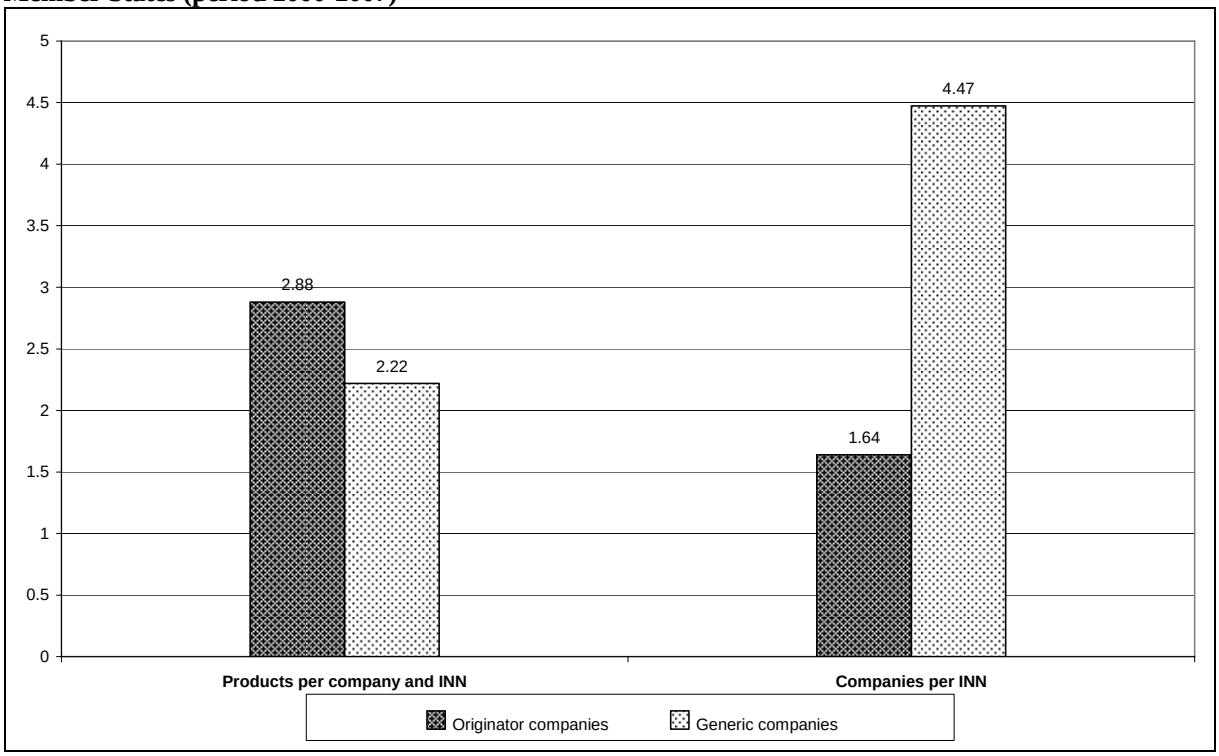
(321) As can be seen, originator companies have a higher average number of products per company and INN (2.88) than generic companies (2.22), which indicates that generic companies focus on a few selected products for a given INN, while originator companies offer a broader product range. At the same time, in general, the average number of originator companies active on each INN (1.64) is significantly lower than the number of generic companies (4.47).

194 In the case of the E75 list, Table 11 indicates the average number of INNs per Member State. This does not necessarily mean that those E75 molecules sold in a given Member State also already faced loss of exclusivity in that particular Member State in the reference period 2000-2007. For further details see the Methodology Annex (Annexes to Chapter A).

195 In Figure 35 and Figure 36 the category of originator companies includes originator company itself and/or the companies which have obtained a licence to produce and sell the INN concerned.

196 The Member States selected are Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

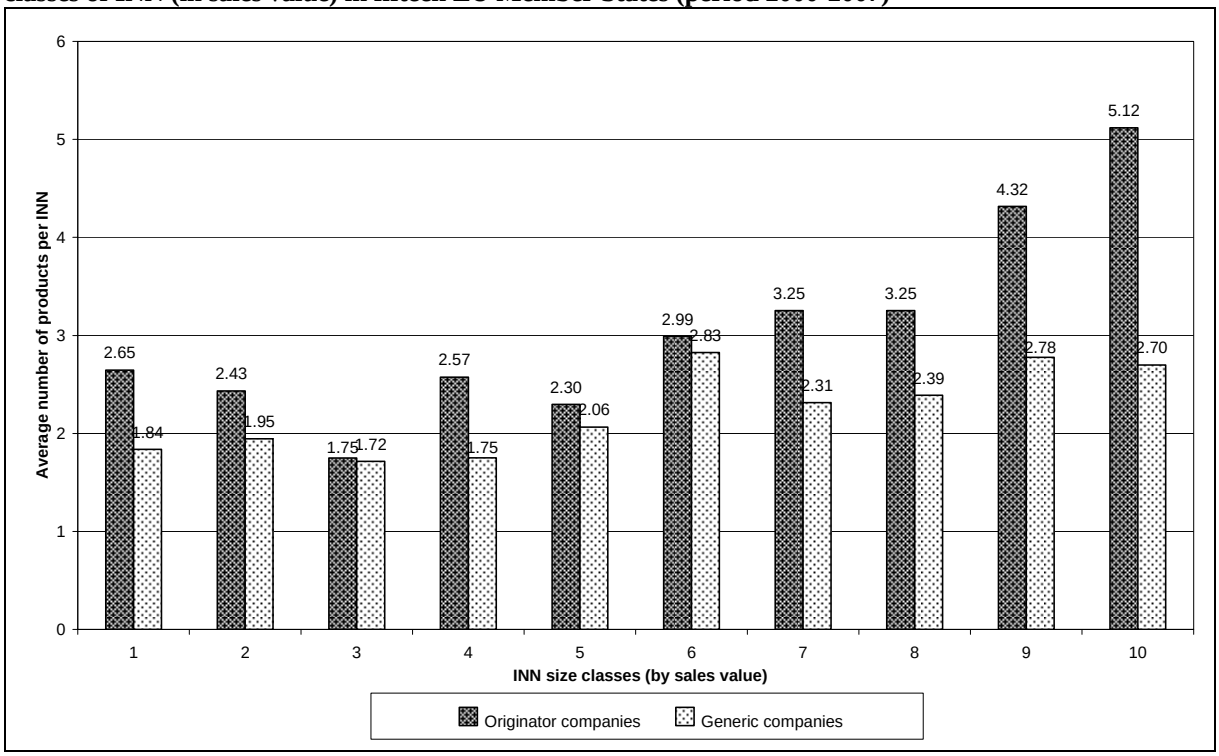
Figure 35: Average number of originator and generic products and companies per INN in fifteen EU Member States (period 2000-2007)



Source: Pharmaceutical Sector Inquiry (based on IMS data) (E75)

(322) Figure 36 illustrates, for the period 2000-2007, the average number of products of generic and originator companies per INN for ten size classes of INNs ordered by sales (value). The size classes are based on the E75 sample and rank INNs into groups, starting from the INNs with the lowest sales (class 1) and moving up to those with the highest (class 10). As expected, the average number of products per group of INNs varies substantially as a function of the sales generated by each INN. The average number of products per INN in the first class (lowest selling) is 2.65 and 1.84 for the originator and generic companies respectively. The figure shows that originator companies have a higher number of products per company and INN in all the INN classes than the generic companies. The difference between the two types of companies is more significant for the INNs with high sales value. The originator companies have, on average, 5.12 products per company and INN in the class of best-selling INNs, whereas the generic companies have an average of 2.70 products per INN. All in all, Figure 36 confirms that originator and generic companies have a more diversified product portfolio for the best-selling INNs.

Figure 36: Average number of originator and generic products per company and INN, over different size classes of INN (in sales value) in fifteen EU Member States (period 2000-2007)



Source: Pharmaceutical Sector Inquiry (based on IMS data) (E75)

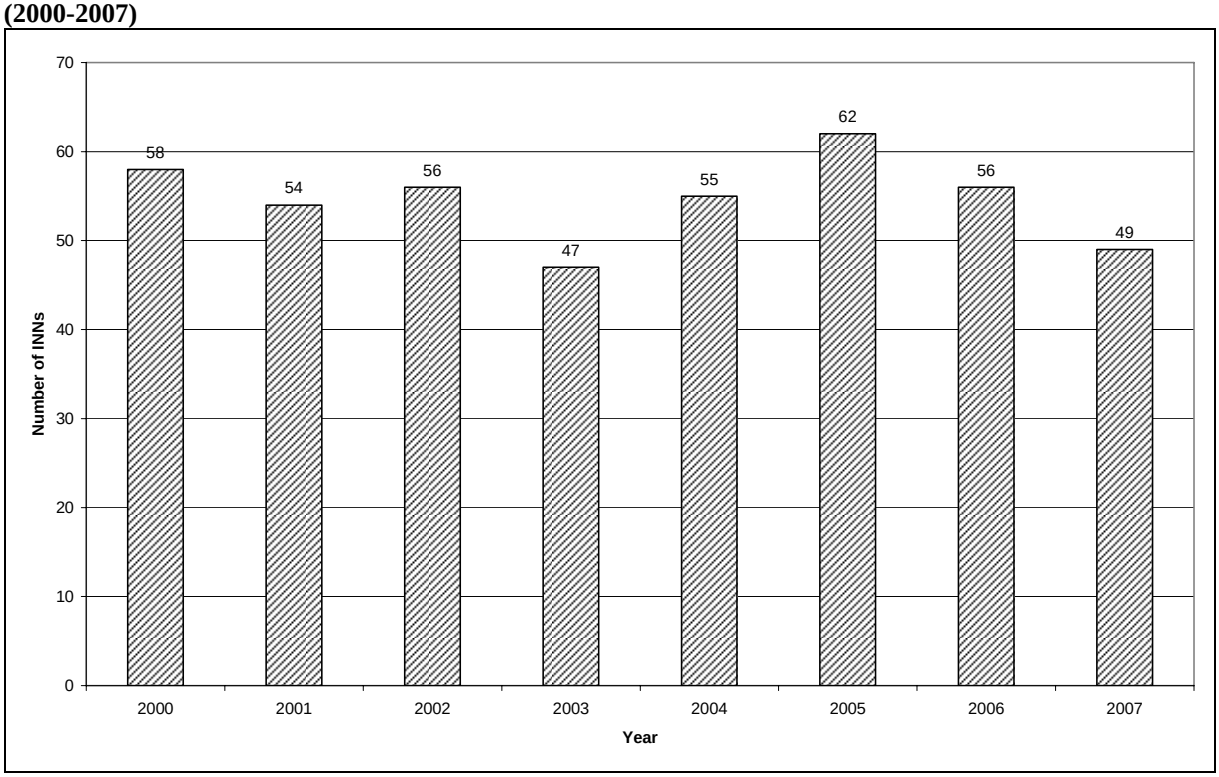
1.1.2. Overview of INNs where a Product Was Launched or Lost Exclusivity

(323) Figure 37 shows the number of INNs on the T50 list[197] in which respondent originator companies launched at least one product in at least one Member State over the period 2000 - 2007. It shows the large number of INNs under which originator companies launched products during the period considered, confirming the relevance of this universe to the sector inquiry. For the sake of completeness, it must be added that the results are similar when considering the E75 list.

(324) Note that the same INN can be counted in several years in cases where different products from the same INN were launched in more than one year. At the same time, each INN is counted only once if more than one product is launched within the same year by one or more originator companies in at least one EU Member State.

[197] In order to analyse the originator companies' product launch activity, the most remunerative INNs were selected.

Figure 37: Number of INNs under which originator companies launched at least one product in the EU (2000-2007)



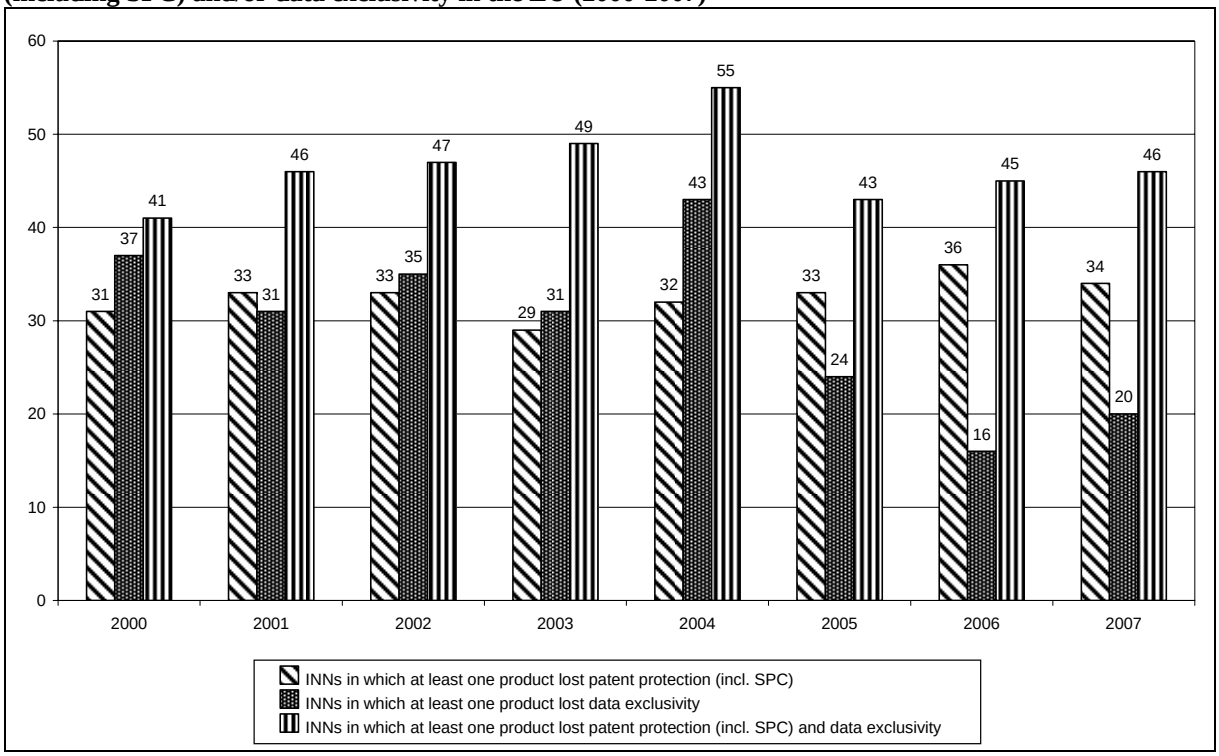
Source: Pharmaceutical Sector Inquiry (T50)

(325) Figure 38 shows the number of INNs on the E75 list[198] for which a product lost patent protection including SPC, data exclusivity or both in at least one Member State in the period 2000 - 2007. It shows a significant number of INNs offering possible opportunities for generic companies to prepare more imminent entry, which confirms the importance of this universe for the sector inquiry. Note that in Figure 38 the same INN can be counted in several years in cases where different products related to that INN lost protection in more than one year.[199]

198 In order to analyse the potential opportunities for generic companies to launch a product, the INNs facing loss of protection were selected.

199 At the same time, each INN is counted only once if more than one product is launched within the same year by one or more originator companies in at least one EU Member State. Moreover, since a given product can lose patent protection in one year and data exclusivity in another, the column indicating the INNs where at least one product lost patent protection and data exclusivity is not simply the sum of the other two columns for the same year.

Figure 38: Number of INNs in which at least one product of originator companies lost patent protection (including SPC) and/or data exclusivity in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry (E75)

(326) Figure 39 indicates the number of INNs in the T50 list[200] under which originator companies launched a product or lost patent protection including SPC and data exclusivity on a product in at least one Member State in the period 2000 - 2007. This information is also grouped by ATC 1 class.[201] Hence, this figure illustrates the main therapeutic areas in which the originator companies investigated launched products or lost patent protection and/or data exclusivity for their products, providing an initial indication of therapeutic classes in which the market interaction between originator and generic companies could have been more or less effective in the period considered.

(327) Figure 39 shows that for the sample of INNs on the T50 list, the originator companies launched the highest number of products in the following ATC 1 classes: cardiovascular system (15), nervous system (14), and alimentary tract and metabolism (10). These are also the classes in which the highest number of INNs lost patent protection and data exclusivity. For the sake of completeness, it must be added that the results are similar when considering the E75 list.

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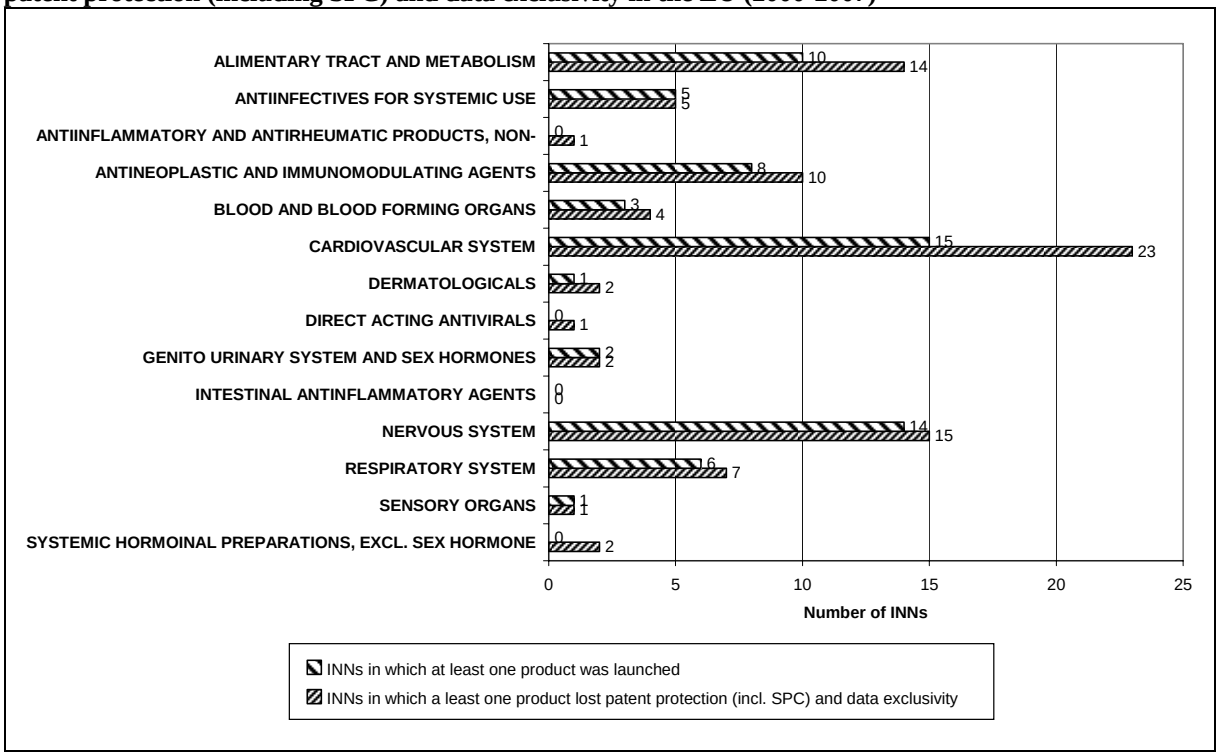
200 For this figure, the T50 universe was chosen, as it comprises the most remunerative INNs whether protected or not on which originator companies focus their activity.

201 "ATC" stands for Anatomical Therapeutic Chemical classification, i.e. an international standard for classifying medicines. Class 1 of the ATC system provides indication on the general therapeutic group to which a medicine belongs.

Figure 39: INNs per ATC 1 class in which originator companies launched at least one product or lost patent protection (including SPC) and data exclusivity in the EU (2000-2007)



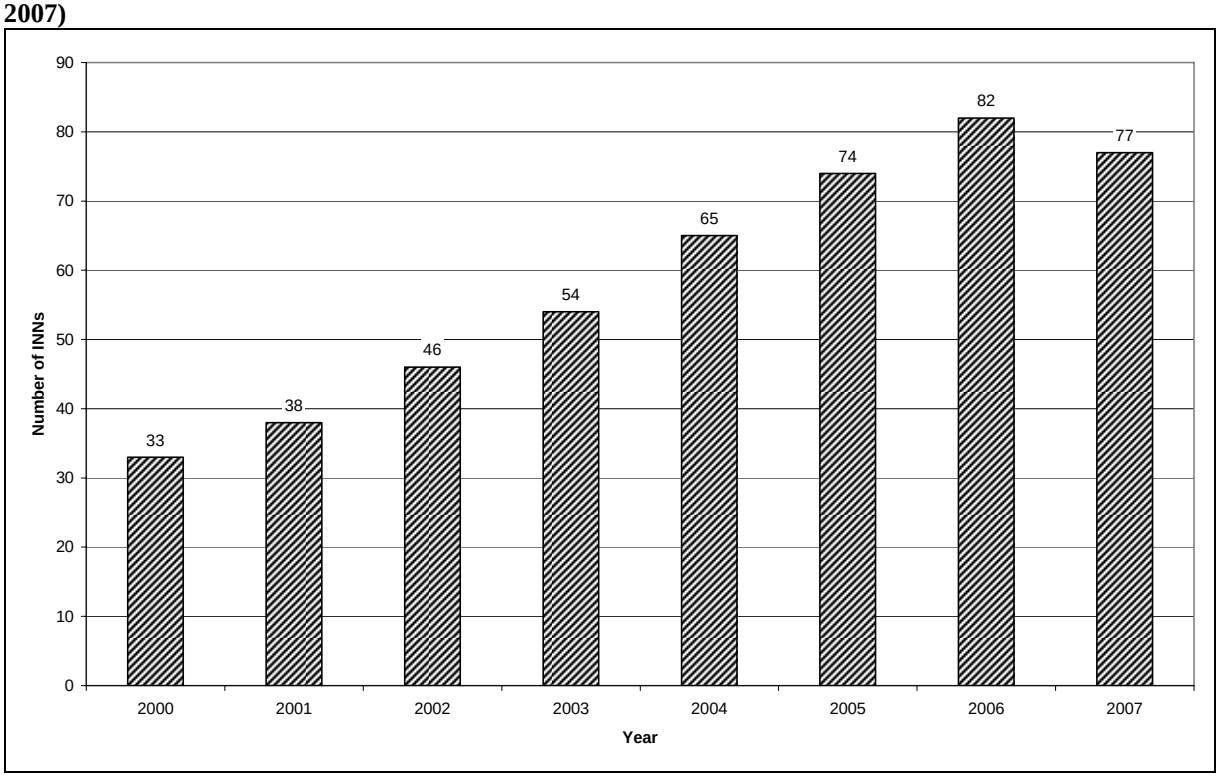
Source: Pharmaceutical Sector Inquiry (T50)

(328) Figure 40 illustrates the number of INNs on the E75 list[202] where generic companies launched at least one product in a Member State in the period 2000 - 2007. It shows that generic companies became active on a significant number of INNs each year. Further analysis demonstrated that mainly the same INNs are concerned each year. In general terms, this could be because additional generic companies began selling products under that INN and/or the same generic companies launched additional products for a given INN.[203] The figure provides an initial indication of INNs where market interactions between generic and originator companies could have taken place during the period considered.

202 In order to analyse generic product launch activity, the INNs facing loss of protection were selected.

203 Note that the same INN can be counted in several years in cases where different generic products for the same INN were launched in more than one year. At the same time, each INN is counted only once if more than one product was launched within the same year by one or more generic companies in at least one Member State.

Figure 40: Number of INNs for which generic companies launched at least one product in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry (E75)

Summary

For the purpose of the sector inquiry a representative sample of 219 molecules (also referred to as INNs, i.e. the international non-proprietary name) was selected for the in-depth analysis. The INNs chosen include products which faced loss of exclusivity in the period 2000 – 2007 (E75 list) as well as bestselling medicines (T50 list).

The sector inquiry confirmed that generic companies brought fewer versions of a medicine to market than originator companies for the same INN. Medicines with a higher turnover were characterised by a higher degree of product differentiation.

1.2. Patents

(329) In the pharmaceutical industry, patent protection has a huge bearing on the commercial success of a company. By providing exclusive rights to the holder, patents offer a pharmaceutical company the opportunity to reap financial reward for investment made in the development of new therapeutic agents. At the same time, patents affect market entry by a company's competitors, both originator and generic alike, in that they can prevent other parties from exploiting the invention for a set period.

(330) In the context of the sector inquiry, it is therefore important to provide an overall picture of pharmaceutical companies' activities in the patent arena, before looking further into the information available and drawing any conclusions on the use of patents to support commercial activities. Since originator companies have traditionally been those which have sought patent protection for their inventions, this group was asked to provide information on their patents and patent applications.

(331) This section of the report provides a general overview of the geographical scope of patenting, patent applications by originator companies and their outcomes, and of originator companies' patent portfolios. These aspects are addressed with particular reference to the 27 Member States and the information gathered on the 219 INNs covered by the sector inquiry. Application data from the European Patent Office (EPO) are provided for all patent applications in all sectors, a proxy for the pharmaceutical sector and organic chemistry for general comparative purposes. The section further considers patent portfolios in terms of applications made over the lifetime of the primary patents for different INNs. Finally, some brief observations are made on the filing of patent applications by generic companies.

1.2.1. Geographical Scope of Patenting

(332) As explained previously,[204] patent rights are limited with respect to their geographical scope and can only be enforced in those countries where a valid patent exists. Accordingly, companies must decide where they require patent protection. In the absence of a community patent, companies active in the EU must decide for which Member States they wish to obtain protection, either at individual national patent offices or centrally via the EPO. As the filing of patent applications and indeed the maintenance of granted patents bear significant costs, low though they may be compared to the revenues earned from blockbuster medicines,[205] individual companies may decide to set priorities in the selection of countries where they wish to obtain patent protection.

(333) In fact, more than a third of the originator companies (15 out of 43) submitted patent strategy documents indicating that they employ a 3- to 5-tier system which groups

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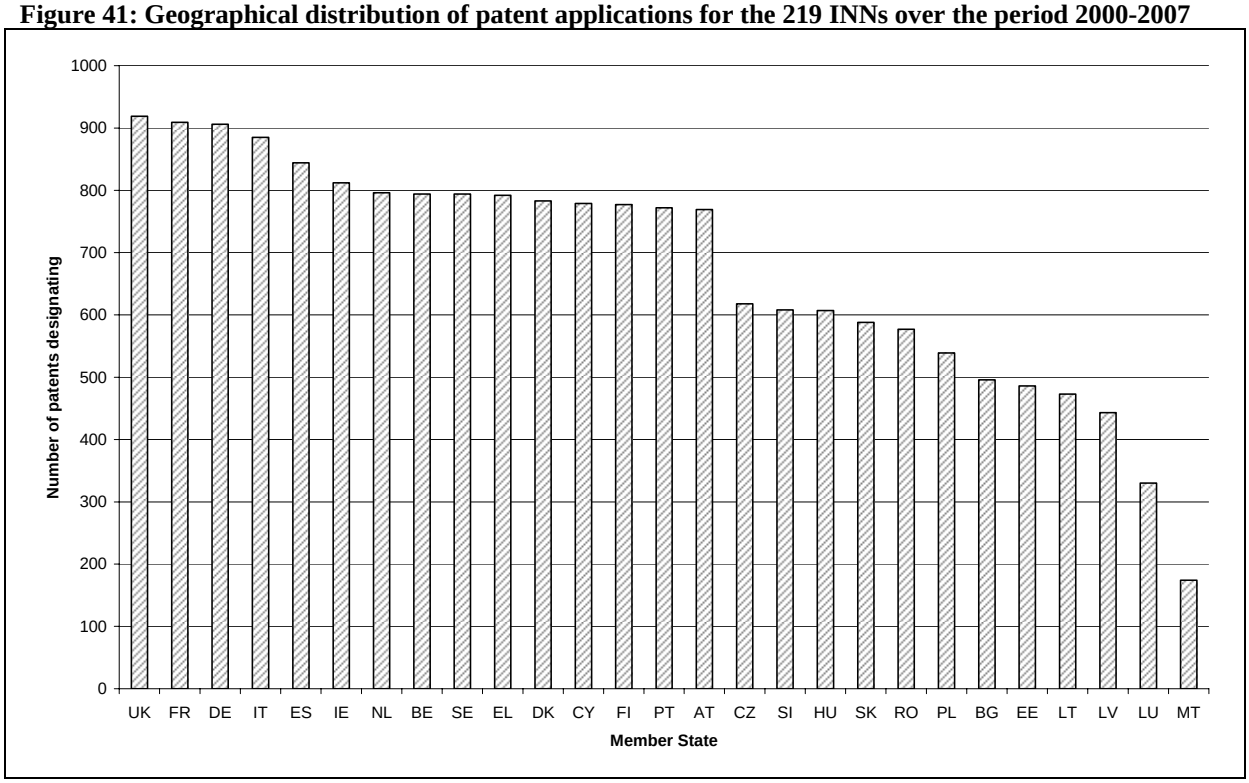
[204] For further details see Chapter B.2.1.

[205] For further details see Chapters B.2.1. and D.1.1.

patent applications according to their geographical importance. The tier regarded by the companies as being the most important covers the most extensive geographical scope, *viz.* all PCT member states plus some non-PCT members, whereas the least important tier contains only a few strategically-important areas, usually the USA, the EPC contracting states (or a selection thereof) and Japan. The analyses in this section focus on patenting in the EU.

(334) Analysis of the responses to the sector inquiry showed that, in respect of the 219 INNs, an average 14.8 states (of the 27 Member States) were designated for each patent or application at the EPO. The distribution of patents and applications for the 219 INNs across the 27 Member States for the period 2000 – 2007 is shown in Figure 41.

Figure 41: Geographical distribution of patent applications for the 219 INNs over the period 2000-2007



Source: Pharmaceutical Sector Inquiry

1.2.2. Patent Applications

(335) The period 2000 – 2007 saw a markedly greater increase in pharmaceutical-related patent applications. A proxy for pharmaceutical applications, based upon the IPC[206] classification A61K and termed A61K* in this report, was used to give a general idea of this trend.[207] Applications with classifications falling within the definition of A61K*

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206 The International Patent Classification (IPC) system is used to classify patent applications by subject-matter and is currently in its eighth version (IPC8) with version 9 (IPC9) planned to be introduced on 1 January 2009. For further information on the IPC, see http://www.wipo.int/classifications/ipc/en.

207 The IPC classification A61K relates to 'Preparations for Medicine, Dentistry and Toiletry'. This was restricted to give A61K*, which comprises all A61K sub-classifications with the exception of those

were taken as the closest proxy for pharmaceutical applications. As a comparison, data is presented for organic chemistry[208] and all sectors (represented by the overall EPO figures).[209]

(336) Table 16 shows the numbers of pharmaceutical patent applications filed at the EPO in A61K*, organic chemistry and all sectors. Thus, whilst an increase of around 40% was seen in the total number of patent applications filed at the EPO from 2000 to 2007, the increase in A61K* doubled between 2000 and 2007, corresponding to an average 10.2% increase *per annum* compared to 4.9% for all sectors. In organic chemistry the number of applications rose by 61%, corresponding to an average 7% increase *per annum*.

Table 16: Total European and Euro-PCT (regional phase) filings at the EPO for all sectors, organic chemistry and A61K*

Year of Filing	2000	2001	2002	2003	2004	2005	2006	2007
All Sectors	100,702	110,115	106,341	116,832	123,761	128,724	135,425	140,882
Organic Chemistry	5,435	6,022	6,311	6,622	6,817	7,193	8,203	8,743
A61K*	2,876	3,650	3,762	4,515	4,988	5,110	5,562	5,687

Source: European Patent Office

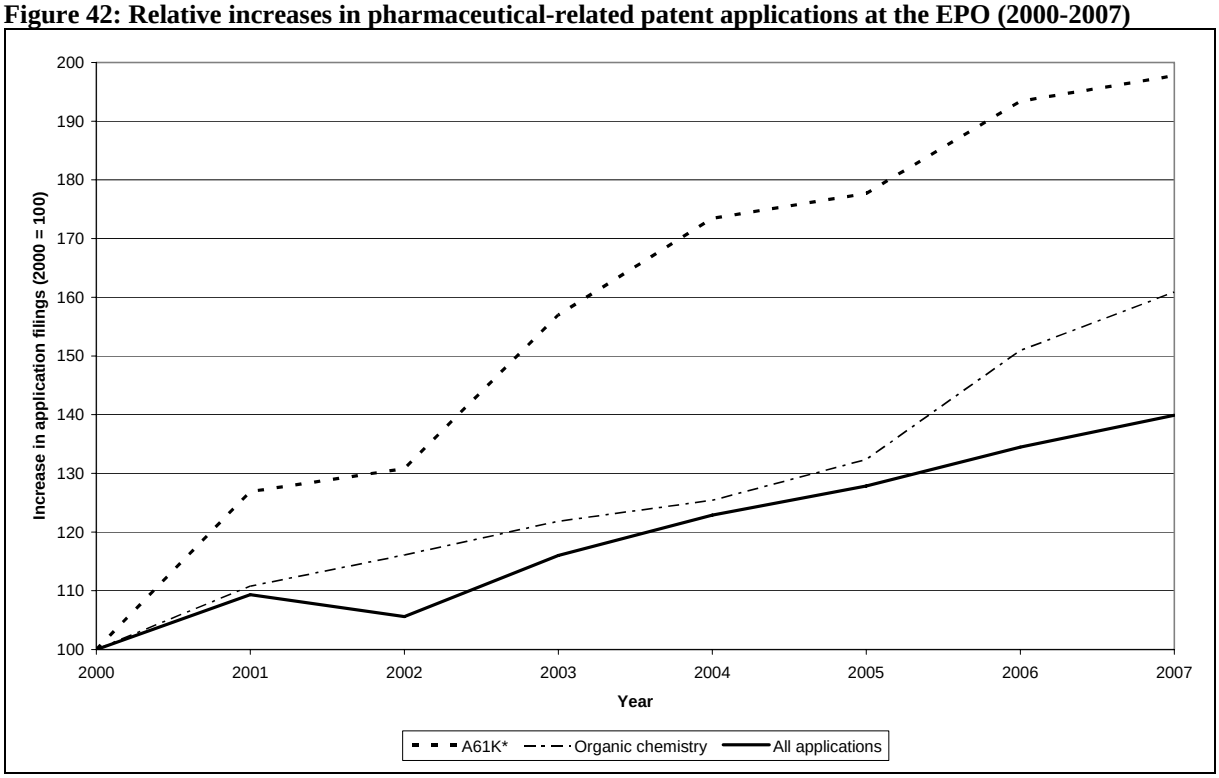
(337) The divergence in patent application rates is brought out visually in Figure 42, which shows the relative increases in applications based on year 2000 = 100.

classified as A61K6 - 'Preparations for dentistry' - and A61K8 (A61K7 under IPC7) - 'Cosmetics or similar toilet preparations'. The sub-classification A61K38 - 'Medicinal preparations of undetermined constitution containing material from algae, lichens, fungi or plants, or derivatives thereof, e.g. traditional herbal medicines ' - was first introduced into the IPC on 1 January 2006 with version 8 and was also disregarded.

208 The technical unit 'organic chemistry', found in the EPO Annual Reports, covers the IPC classifications C07 and A01N.

209 Whilst applications for new pharmaceutical chemical entities are normally classified in one of the classifications of Section C of the IPC, it is recognised that these classifications also comprises organic molecules for purposes other than pharmaceuticals (e.g. agrochemicals). Within the context of the sector inquiry it was, however, not possible to separate applications classified as organic chemistry into those directed to pharmaceutical products and those directed to non-pharmaceutical products. Nevertheless, the field organic chemistry is presented for general comparative purposes.

Figure 42: Relative increases in pharmaceutical-related patent applications at the EPO (2000-2007)



Source: Pharmaceutical Sector Inquiry (based upon European Patent Office data)

(338) The sector inquiry asked companies to provide details of granted patents (both expired and still in force) and pending applications in the EU Member States in relation to the 219 INNs of the inquiry. These were not restricted to applications prosecuted at the EPO, but also covered direct applications to national patent offices. Responses showed that during the period 2000 – 2007, originator companies filed over 28,750 patent applications at the EPO concerning prescription medicines for human use.[210]

(339) Originator companies were also asked at which stage of development of a drug candidate (R&D, pre-clinical, clinical phases 1-4 or other) they file their patent applications. Many respondents said that they do not keep records of that nature. However, as a general rule, companies stated that they mostly file patent applications during the research phase. For those companies which were able to offer information on this subject, the majority of their applications (84%) were indeed filed during the research phase.

(340) The originator companies were asked to give details for the period 2000 – 2007 of all patents in force and those granted, as well as applications pending, in the 27 Member States for the 219 INNs. In order to determine the potential effect on competitor companies, each application filed at the EPO and still pending was taken as being an application for a patent in each designated State (if one of the 27 Member States).

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210 The expression "prescription medicines" was defined as including not only substances or medicines which are already available on prescription but also those which have the potential to become prescription medicines.

Hence, a pending European Patent application which designated five Member States was counted as five individual applications, one for each designated Member State.

(341) The responses revealed that for the 219 INNs nearly 40,000 patents had been granted or patent applications (as defined above) were still pending. Just over three quarters (78%) of these cases were filed at directly the EPO and 22% at national patent offices.[211]

(342) Of the nearly 40,000 cases, some 87% were classified by the companies as involving secondary patents, giving a primary:secondary ratio of approximately 1:7. Of the applications still pending, 93% were classified as secondary (a primary:secondary ratio of approximately 1:13), whilst 84% of the patents granted were classified as secondary (a primary:secondary ratio of approximately 1:5).

(343) The subject-matter of the secondary patent applications filed in respect of the 219 INNs was largely concerned with claims to products, processes and second/further medical uses. Table 17 gives details of the four most frequent categories of claim in secondary patents.

Table 17: Subject-matter of secondary patents or patent applications as classified by the companies

Subject-matter claimed	% with at least one claim to subject-matter
Products	81%
Processes	38%
Second/further medical uses	24%
First medical uses	6%

Source: Pharmaceutical Sector Inquiry

(344) A further breakdown of the product claims in Table 18 shows a significant tendency to file claims to formulation products,[212] with 57% of all product claims being directed to such products. Different physical forms of an INN (polymorphic forms, salts, hydrates, particles and solvates) accounted for a further 13% of product claims.

[211] It should be noted that a direct application at a National Patent Office could, in principle, still be filed at the EPO within the priority year for search and examination by the EPO. In such cases, national application filings are often simply used to establish a priority right.

[212] The term "formulation products" covers those claims classified by companies as 'formulations', 'dosage forms' or 'tablets'.

Table 18: Break-down of product claims[213] in secondary applications

Category of product claim	% of all product claims
Formulations	57%
Devices	7%
Combinations	7%
Polymorphic forms	5%
Salts	4%
Intermediates	4%
Substances	4%
Product by-process	4%
Unspecified	3%
Hydrates	2%
Particles	1%
Solvates	1%
Others	1%

Source: Pharmaceutical Sector Inquiry

1.2.3. Outcomes of Patent Applications

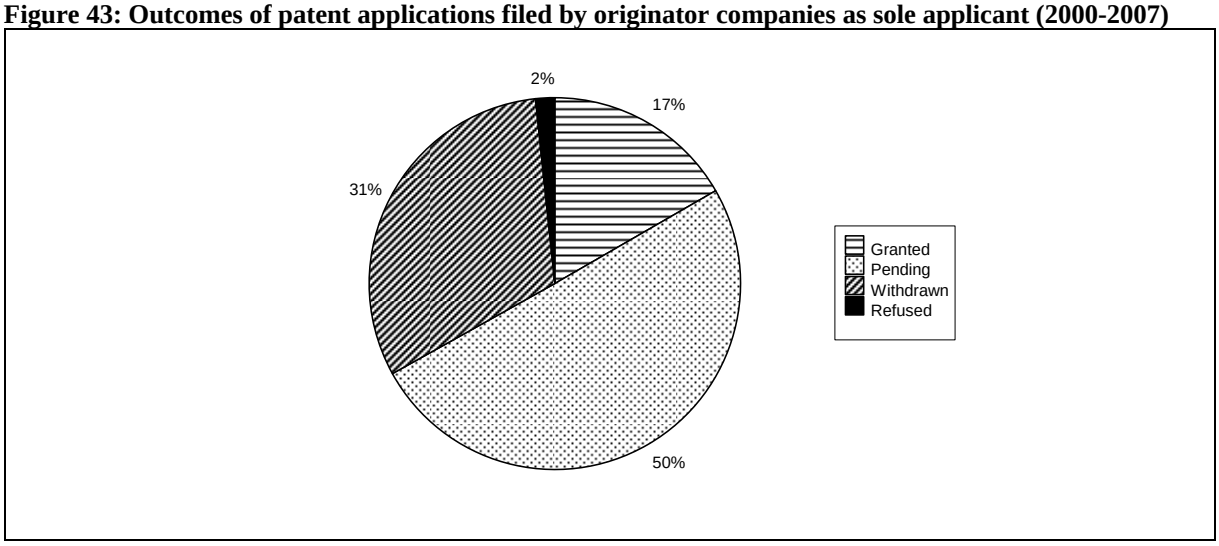
(345) Companies were asked to comment on the source and fate of patent applications made over the period 2000 – 2007. From the data received, it emerged that the vast majority (95%) of patent applications filed at the EPO by originator companies are made with the company as sole applicant.[214]

(346) Figure 43 shows the fate of the patent applications for prescription medicines for human use filed at the EPO between 2000 and 2007 with the originator company as sole applicant. In 50% of the cases, no decision has yet been reached, 17% were granted a patent, 31% of applications were withdrawn and 2% were refused. For the cases decided, this translates into 34% granted and 66% refused/withdrawn.

213 For a brief explanation of these types of claims, see Annex: Claim Types (Annexes to Chapter B).

214 A preference for being the sole applicant also emerged from the responses to questions on patent applications at the EPO concerning prescription medicines.

Figure 43: Outcomes of patent applications filed by originator companies as sole applicant (2000-2007)



Source: Pharmaceutical Sector Inquiry

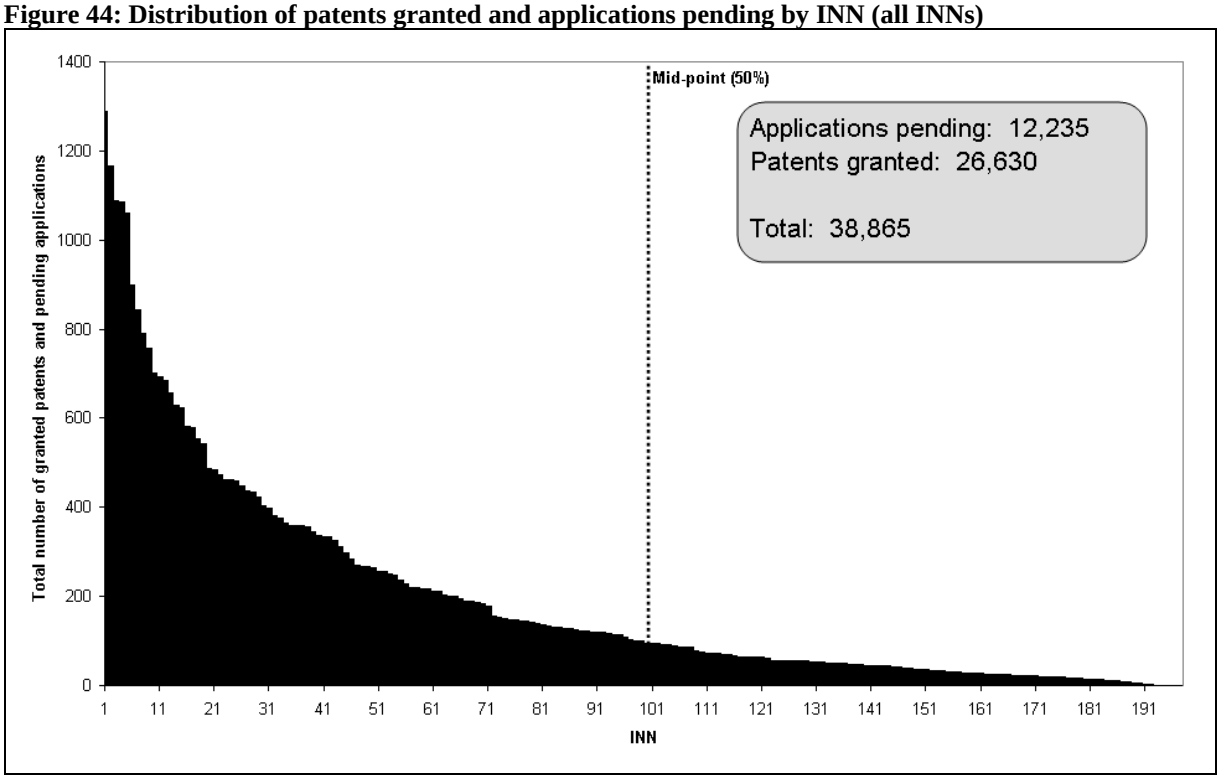
(347) The situation for cases where the originator company was a co-applicant (5% of applications) was similar to that presented in Figure 43.

1.2.4. Patent Portfolios

(348) This sub-section considers patent applications and patents granted together as a whole in order to give a more general picture of the use of patents by originator companies.

(349) The data provided by respondent companies concerning their patent portfolios in relation to the 219 INNs were analysed for trends in distribution. Figure 44 shows the distribution of patents and patent applications based on the information available on 219 INNs in the 27 Member States (relevant information on 22 INNs was incomplete or missing). The number of granted patents and pending applications can be as high as 1,300 per INN. It should be noted once again that the number of patents and patent applications relates to the number of Member States where a patent has either been validated or has the potential to be validated (because the application designates the Member State).

Figure 44: Distribution of patents granted and applications pending by INN (all INNs)



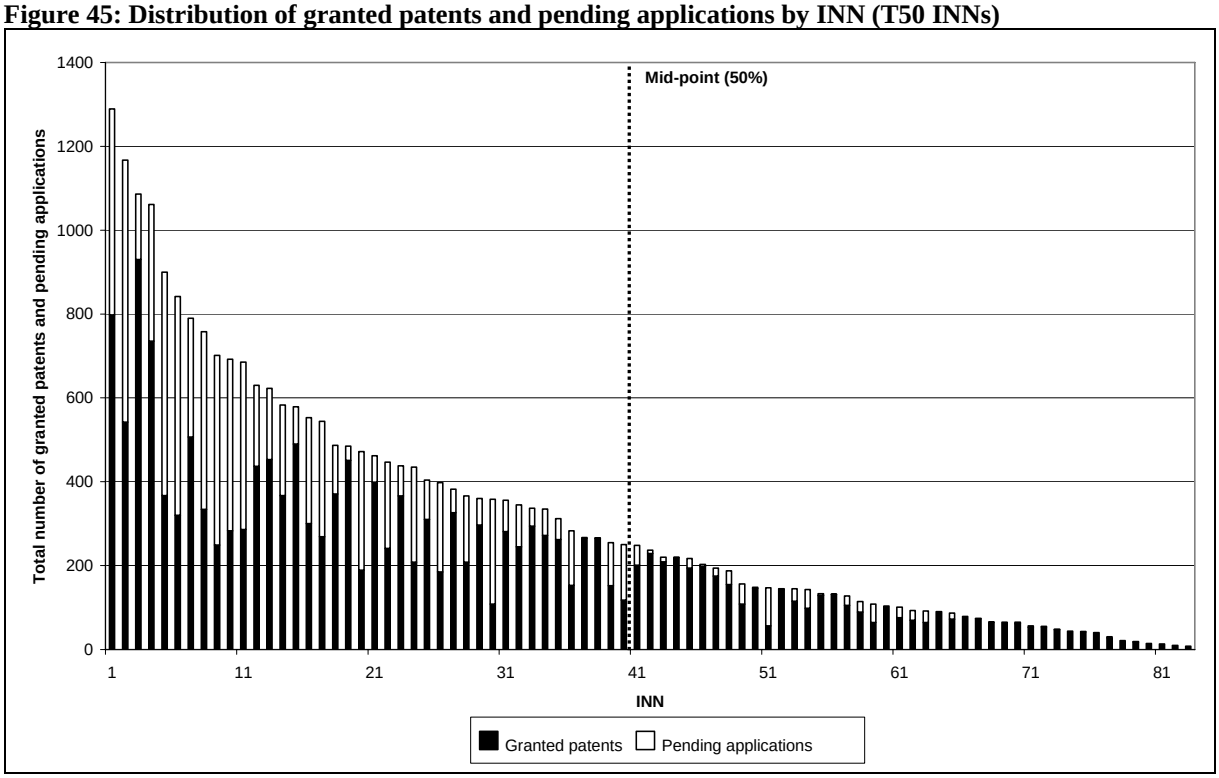
Source: Pharmaceutical Sector Inquiry

(350) It is also clear from Figure 44 that the majority of granted patents (or applications) held are for a small proportion of the 219 INNs. For example, the top 20% of INNs (by total number of patents granted and pending applications) account for 60% of all patents and applications, whilst the top 50% account for 90%.[215]

(351) Figure 45 shows a similar distribution pattern for the T50 INNs. It also draws a distinction between patents granted and patent applications per INN. As is clear from the figure, the upper half of the INNs sorted by number of granted patents and pending applications reveals a high degree of ongoing patenting activity, with a significant number of patent applications pending. Patent applications account for 38% of the aggregate number of granted patents and applications for the upper half of the INNs, which stands in stark contrast to only 12% of applications in the aggregate number for the lower half. Another noteworthy observation which arises from the comparison of Figure 44 and Figure 45 is that the median number of patents held in the T50 group (see Figure 45) is 237, whereas that of all INNs (see Figure 44) is only 98.5.

[215] A small number of patents granted (or applications pending) was found to cover more than one INN. In these cases, the patent (or application) in question was counted in the total for each INN to which it relates.

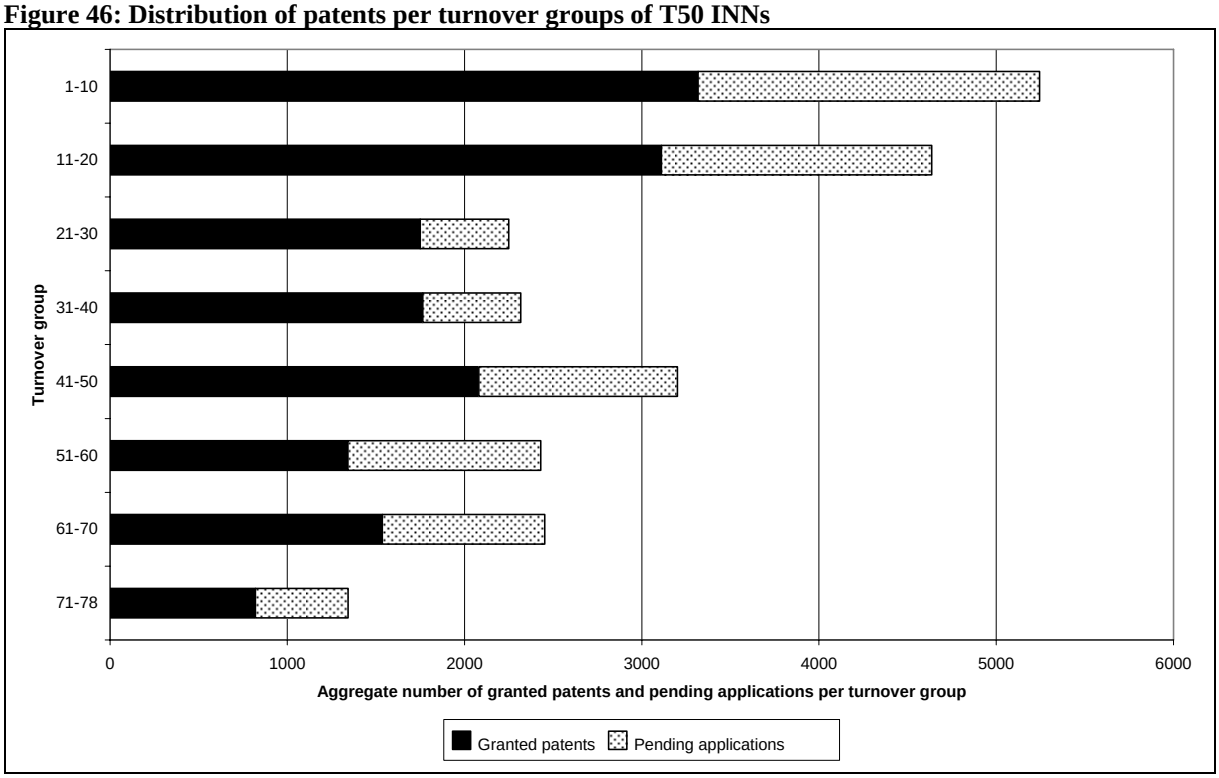
Figure 45: Distribution of granted patents and pending applications by INN (T50 INNs)



Source: Pharmaceutical Sector Inquiry

(352) Figure 46 shows the distribution of granted patents and pending applications as a function of the market value of INNs from the T50 group. For this purpose, INNs were divided into groups based on average sales values for the period 2000 – 2007 in the EU (where this information was available). Overall, Figure 46 shows that the number of granted patents and pending applications increases with the value of the INN, in particular for the top-selling INNs in the T50 group. The figure also clearly demonstrates that the twenty top-selling INNs, i.e. groups 1-10 and 11-20, have by far the largest numbers of granted patents and pending applications. More specifically, the top ten INNs have more than 5,000 granted patents and pending applications, whilst INNs 11-20 have around 4,500. The mid-tier groups of INNs (in terms of sales) show a fairly even distribution of patents and applications, with between 2,000 and 2,500 per group, with the exception of INNs 41-50, which have more than 3,000. The last group (INNs 71-78) has a significantly lower number of granted patents and pending applications; however, this cannot be explained solely by the fact that it consists of two INNs fewer than the other groups.

Figure 46: Distribution of patents per turnover groups of T50 INNs



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

1.2.5. Patent Portfolio Life Cycles of Some Important INNs

(353) Patent portfolio life cycles were determined in terms of development of the patent portfolio over time by looking at patent applications filed for each INN in the years following the filing of the first (primary) patent. In almost every case, one or more applications filed in the first year ("year 0") for a basic patent are typically followed by filings for formulations, processes and the like in subsequent years. In contrast to the previous subsection, for this analysis applications at the EPO were counted only once. Moreover, only granted patents or pending applications were counted in the analysis. No account was taken of applications which had been filed, but subsequently refused or withdrawn, since these no longer present obstacles to competitors.

(354) It has been submitted that patent portfolios tend to develop over time,[216] with many applications filed in the years immediately following the first application for a given INN. It has also been said that these subsequent applications, or "secondary patents", are usually filed before the first launch of a product containing the INN. This pattern might be called a "conventional portfolio life cycle". Indeed, a number of examples were found amongst the 219 INNs analysed in the inquiry. One such case, for which 19 years' data were available, is presented in Figure 47.

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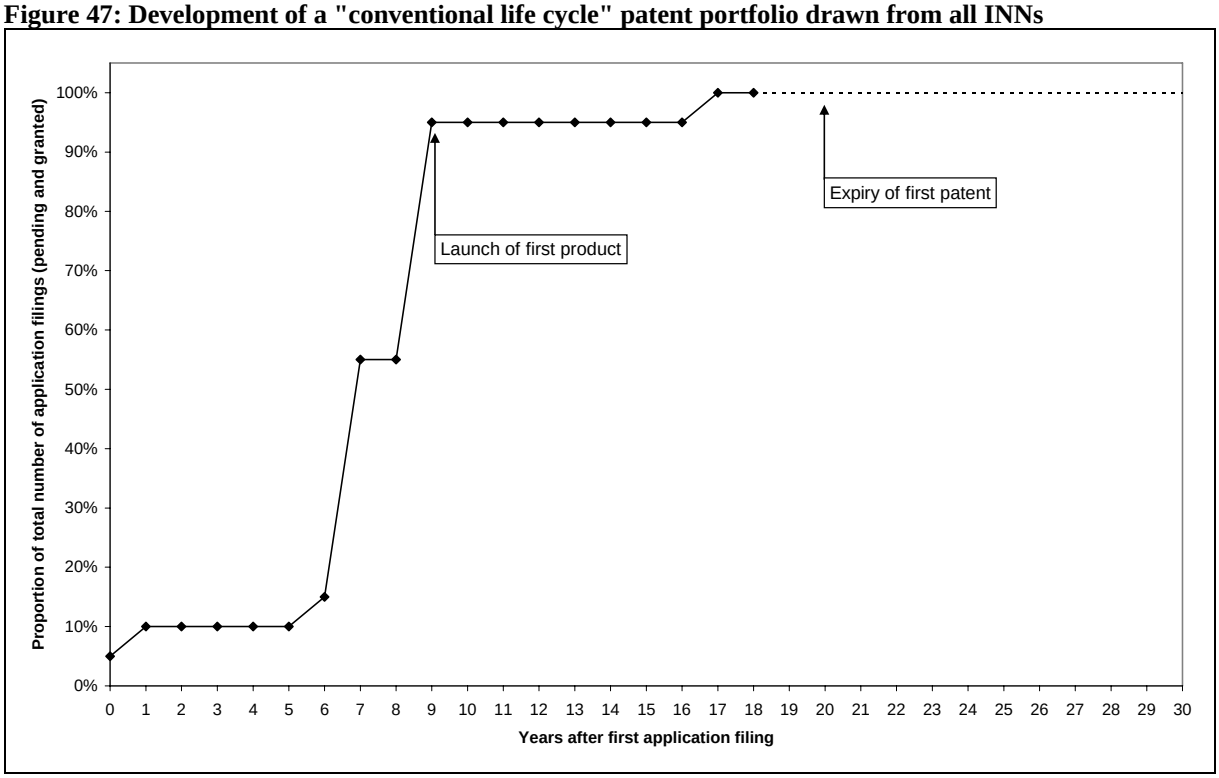
216 EFPIA: Intellectual Property and Pharmaceuticals. June 2008, Section 2.11 and Figure 2.

Figure 47: Development of a "conventional life cycle" patent portfolio drawn from all INNs



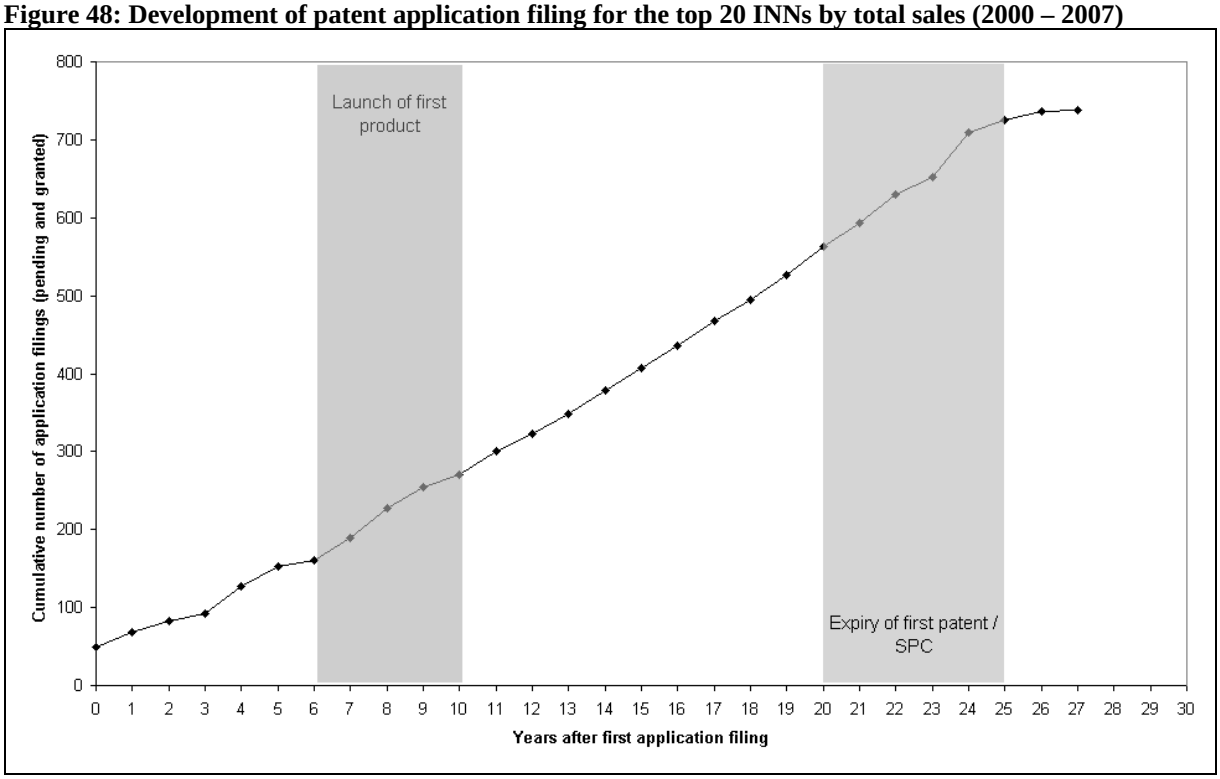
Source: Pharmaceutical Sector Inquiry

(355) Figure 47 clearly demonstrates that the majority of patent applications for inventions involving this particular INN were filed in the years prior to the launch of the first product.

(356) Figure 48 shows the cumulative development of patent portfolio life cycles for the top twenty INNs from the E75 group in terms of their total sales over the period 2000 – 2007. The graph shows the aggregate number of patents filed per year by the first originator company for each INN following the filing of the first application(s). Thus, Year 0 is the year when the first applications were filed and Year 17 is the eighteenth year following the first application. The graph further shows the periods during which the first product was launched for the twenty INNs (this ranged from six to ten years after the first patent application was filed) and when the first patent, and any related SPCs,[217] might be expected to expire. It should be noted, however, that an SPC does not necessarily exist for each INN.

[217] Supplementary Protection Certificates (SPCs) are discussed in Chapter B.2.1.

Figure 48: Development of patent application filing for the top 20 INNs by total sales (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

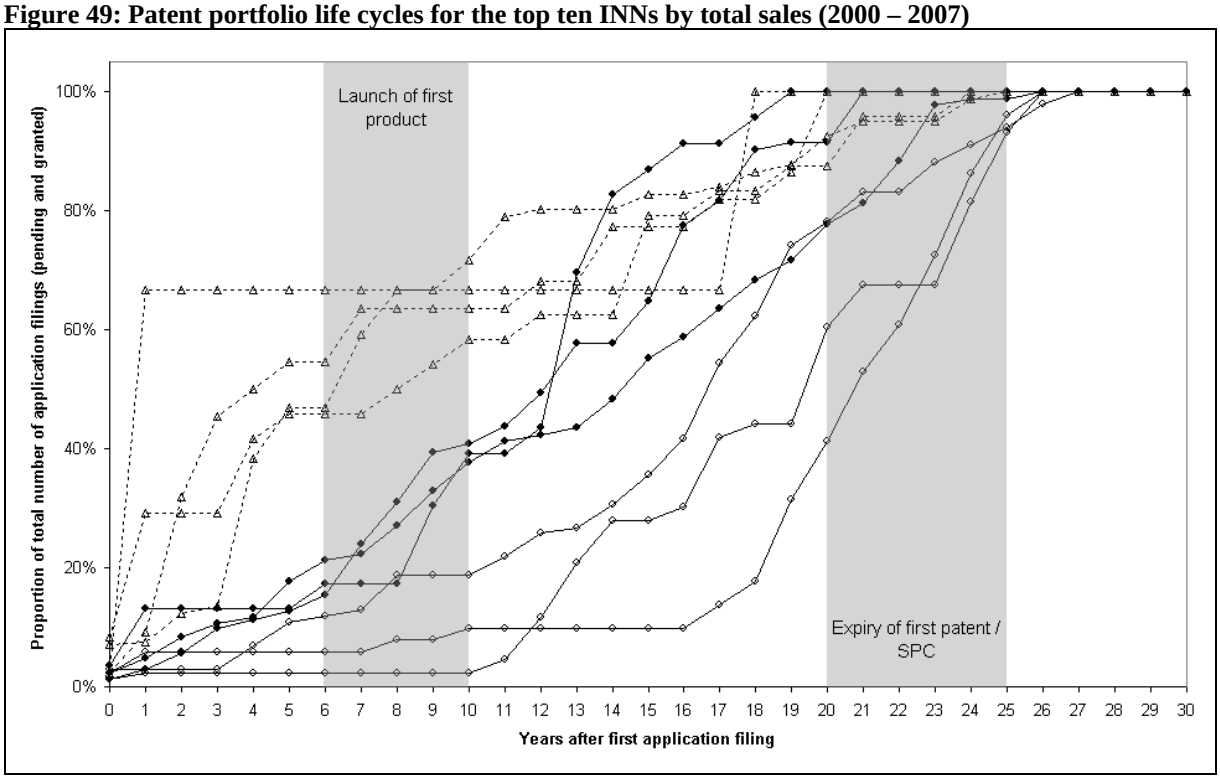
(357) Figure 48 shows that, on average, very few of the total number of patent applications were filed before the first product launch. Instead it suggests a steady increase in the number of applications over the whole lifetime of the primary patent, with a decline in the years immediately after the patent and/or SPC expires.

(358) The situation looks rather different when INNs are examined on an individual basis. Figure 49 shows the development of the patent portfolio life cycles for each of the top ten INNs from the E75 group (in terms of their total sales over the period 2000 – 2007) as a percentage of the total number of applications filed for each INN. The graph also indicates the period during which the first products for each INN were launched and the period over which the first patent for the INN, including any supplementary protection certificate (SPC), might be expected to expire. At least six of the top ten INNs, shown as open (-○-) and filled (-●-) circles, display patent portfolios where under 50% of the total number of patents are filed before the first product is launched and where the majority of the applications are made well after that date. The remaining applications, shown as open triangles (-Δ-), are more in keeping with the "conventional life cycle" patent portfolio (see Figure 47).

(359) Figure 49 depicts a clear trend in the case of the top ten INNs for companies to file significant numbers of patent applications well after the first product launch, in particular immediately before or after the primary patent in the portfolio expires.

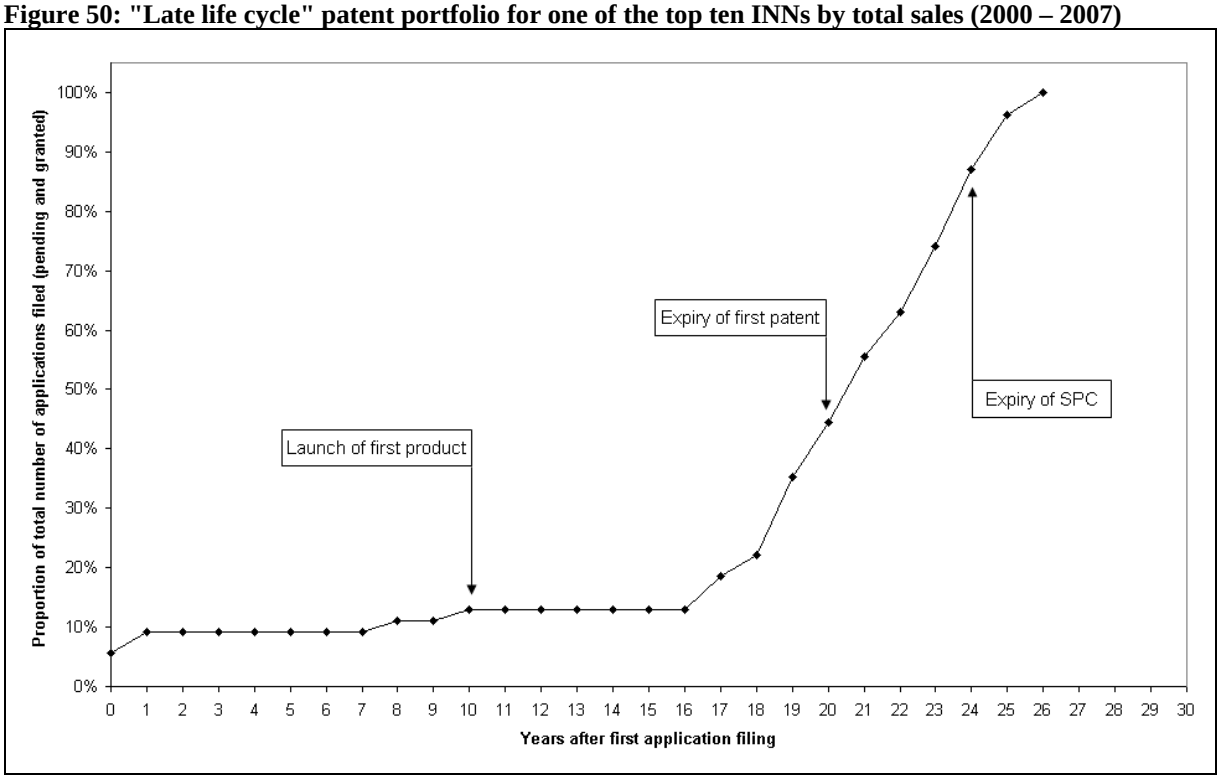
(360) Figure 50 gives one example of a "late life cycle" patent portfolio, drawn from the top ten INNs by total sales, which shows a surge of patent applications in the years immediately preceding loss of exclusivity. This is in stark contrast to the "conventional life cycle" patent portfolio shown in Figure 47.

Figure 49: Patent portfolio life cycles for the top ten INNs by total sales (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

Figure 50: "Late life cycle" patent portfolio for one of the top ten INNs by total sales (2000 – 2007)

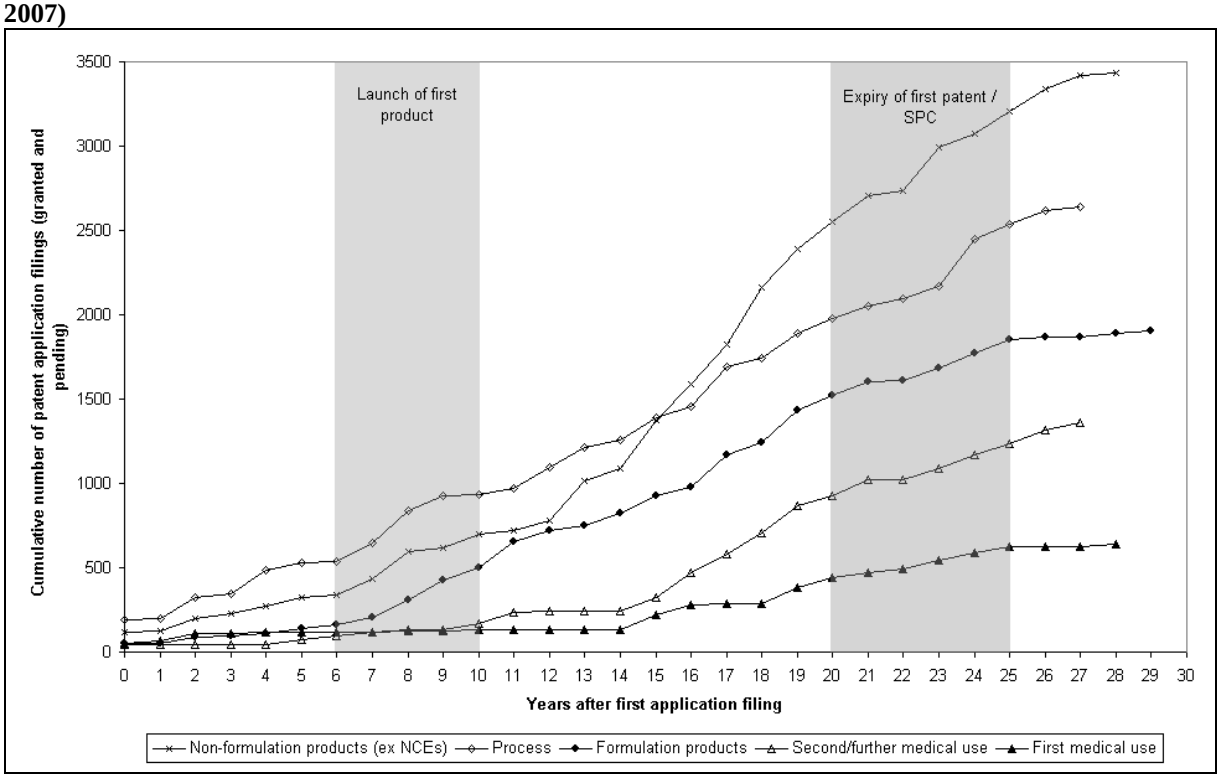


Source: Pharmaceutical Sector Inquiry

(361) A final insight into patent portfolio life cycles is presented in Figure 51. In view of the tendency of companies to file secondary applications for five main categories of claims (see Table 18), each patent for each of the top twenty INNs by total sales was analysed to see which types of claims it contained. Claims were divided into the following

categories: non-formulation products, which include products such as salts, polymorphic forms, particles, solvates and hydrates but exclude NCEs; formulation products, including those classified by respondents as 'tablets' and 'dosage forms'; processes; first medical use claims; and second/further medical use claims. Figure 51 plots the cumulative number of patents with claims in each of the five categories as a function of time (calculated as the number of years following filing of the primary patent).

Figure 51: Patent portfolio life cycles as a function of claim types for the top 20 INNs by total sales (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

(362) The results in Figure 51 show, once again, the trend for companies to continue to file patent applications as the expiry date of the first (primary) patent approaches. Figure 51 also indicates a marked preference for non-formulation product-related claims towards the end of the patent portfolio lifetime. In particular, the filing of claims to non-formulation products increases substantially after the 15-year mark.

(363) Since more than one category of claim can be present in any given application, the sum of the figures in Figure 51 exceeds 100% of the total number of patents filed for these INNs. Interestingly, the number of product claims excluding formulations is much higher for the top ten INNs (where the ratio of non-formulation product:formulation product claims is approximately 2:1) than for the average of the 219 INNs covered by the inquiry (which have a non-formulation product:formulation product ratio of around 1:1 — see Table 18).

1.2.6. Patent Applications Filed by Generic Companies

(364) Primarily, the sector inquiry sought to collect information on patents relating to the list of 219 INNs identified as being of greatest significance to the investigation. In view of the definition of "originator company" for the purposes of the sector inquiry, such patents are *ipso facto* held by originator companies. However, generic companies are also frequently involved in filing patent applications. Consultation of EPO public databases[218] reveals that many of the generic companies questioned in the inquiry were increasingly more active in filing applications for patents over the period 2000 to 2007. In particular, the information in the databases reveals that many of the generic companies regularly file applications for secondary patents on many of the INNs covered by the inquiry. Moreover, these secondary patent applications relate, *inter alia*, to manufacturing processes, formulations, polymorphic crystalline forms, salts, particle sizes and tablet forms of INNs for which the primary patent is held by an originator company.

Summary

The pharmaceutical sector makes use of the patent system to a very significant degree. This is demonstrated by the sizes of companies' patent portfolios (competitors can face up to 1,300 granted patents or pending patent applications across the 27 EU Members states for a single blockbuster INN) and the near doubling in the number of pharmaceutical-related patent applications (as measured by a proxy) before the European Patent Office (EPO) between 2000 – 2007.

Contrary to the general assumption that patent activities occur primarily during the R&D phase, the analysis of the patent portfolios of blockbuster INNs owned by originator companies showed a steady rise in patent applications, occasionally showing an even steeper increase at the end of the protection period of the first patent.

[218] Register Plus on EPOLine® allows free on-line public inspection of all EPO patent application files. Register Plus was searched using generic company names as the applicant. For further information see: http://www.epoline.org.

2. Competition Between Originator and Generic Companies – The Issues

(365) The present chapter examines the competitive relationship between originator and generic companies which market pharmaceutical products in the European Union. As explained in chapters B.1.1., B.1.2. and C.1., originator companies produce and sell pharmaceutical products developed during a lengthy and costly research and development (R&D) process, involving substantial commercial risks. The resulting originator products are protected by intellectual property rights (in particular by patent rights), which give the originator company the opportunity to recoup investment costs and gain benefits rewarding it for its innovative efforts.

(366) This chapter does not question the value of (incremental) innovation. Neither does it aim to provide guidance on whether certain types of practices could be considered compatible or incompatible with the EC competition law. Such an assessment would require in-depth analysis of the individual practice taking into account the factual, economic and legal background.

(367) Originator companies compete with other originator companies (see Chapter C.3.) as well as with generic companies. In principle, generic companies produce and market an equivalent version of the originator medicine once patent protection of the medicine has expired. However, competition between generic and originator companies may begin before patent expiry if the generic company finds a way of entering the market without infringing the patent protecting the originator product, or if the patent relied upon by the originator company is not valid, in particular if it is annulled prior to the formal patent expiry date.[219]

(368) As explained in Chapter B.1.3., the prices of generic medicines are substantially lower than those of originator products. The entry of a competing generic product on the market inevitably results in a significant decline in the price and market share of the corresponding originator product. Therefore, originator companies seek to protect their market position using various means ranging from strategic patenting around the product to patent litigation and interventions before national regulatory authorities.

(369) The purpose of the present chapter is to examine to what extent originator companies employ instruments of the "tool- box" to delay or block the entry of competing generic products on the market. Therefore, the following issues are examined:

Patent strategies of originator companies: the first section examines the various patent strategies employed by originator companies with the aim of maximising profit derived from their patented products and shielding them from competition. The section focuses in particular on patent strategies involving patent clusters and divisional application and their intended effects.

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[219] As explained above, protection can also stem from SPC and/or data/market exclusivity. (The latter does not however provide legal exclusivity.)

Patent-related contacts, disputes and litigation: the second section examines the patterns and the outcome of patent enforcement by originator companies both in patent-related exchanges out of court (such as contacts and disputes) with generic competitors and in patent-related litigation cases before national courts. The section also looks, in greater detail, at costs related with patent litigation, divergence of decisions and interim injunctions.

Opposition and appeals: the third section studies the patterns and outcome of patent opposition procedures and appeals filed by generic companies at the European Patent Office (and at national patent offices), in order to establish whether this provides an alternative route for generic companies to secure their market entry.

Settlements and other agreements: the fourth section analyses the various types of agreements concluded between originator and generic companies. It focuses on settlements of patent disputes, litigation and opposition procedures, and other agreements (such as licence and distribution agreements) and examines companies' considerations for entering into such agreements. This section also contains a brief overview of the established patent settlement practise in the USA as compared with the EU.

Other factors affecting generic entry: the fifth section examines strategies and actions of originator companies aimed at national regulatory bodies (such as marketing authorisation and pricing and reimbursement bodies), other stakeholders (e.g. doctors and pharmacists) as well as distributors and API producers. This section examines pre-litigation contacts and disputes as well as litigation in which originator companies are involved.

Life cycle strategies for follow-on products: the sixth section analyses the relevance of follow-on products and the mechanisms employed by originator companies to switch patients from an earlier generation to follow-on products. In particular, the practices which may facilitate such patient switches are examined.

Cumulative use of practices: the seventh section examines various life cycle tools which may be used cumulatively by originator companies and may affect the entry of the generic product into the market.

2.1. Patent Filing and Patent Enforcement Strategies

(370) For the purpose of this section the term "patent strategies" should be understood to encompass all strategies of a company concerning the use of the patent system to the benefit of the company in relation to generic competition.[220] The term includes strategies on the timing and scope of filing as well as the manners in which patents are applied for.

(371) As already mentioned, in addition to the primary functions of exclusion/protection and information, patents have a multitude of other functions such as creating "freedom to operate", bargaining, standardisation, and company image. Furthermore in some cases originator companies might also have incentives to maintain and use patents for their effect of blocking or delaying the development generic product rather than for protecting an own invention.

(372) In fact, patent strategies can form part of a company's tool-box[221] which are used in order to protect continuous revenue streams from pharmaceutical products by preventing or delaying generic entry.

(373) This section will look at different scenarios that may entice an originator company to employ patent strategies with the aim of preventing or delaying generic market entry. It will then examine the use of patent clusters and the use of divisional applications. Thereafter it will examine the intended effects of this strategy, including litigation strategies in the context of patent enforcement.

(374) For the purpose of illustration a number of quotes have been added, which form only a part of those obtained in the course of the sector inquiry. They may be taken from general policy documents or concrete instructions for individual cases. Most of the quotes were taken from documents obtained during the unannounced inspections by the Commission in January 2008.

2.1.1. Scenarios of Generic Market Entry Addressed by Patent Strategies

(375) Information and data gathered in the course of this inquiry indicate that the ultimate aim of protecting the market share of a product is pursued by obtaining the most efficient, broadest and longest possible patent protection for this product and variations thereof. Two scenarios seem to be particularly noteworthy:[222]

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220 In so far as patent strategies specifically aim to prevent other originator companies from developing or marketing products competing with a product of an originator company, they will be analysed in a separate section, see below Chapter C.3.1.

221 For the different elements of life cycle strategies see above: Chapter B.1.2.

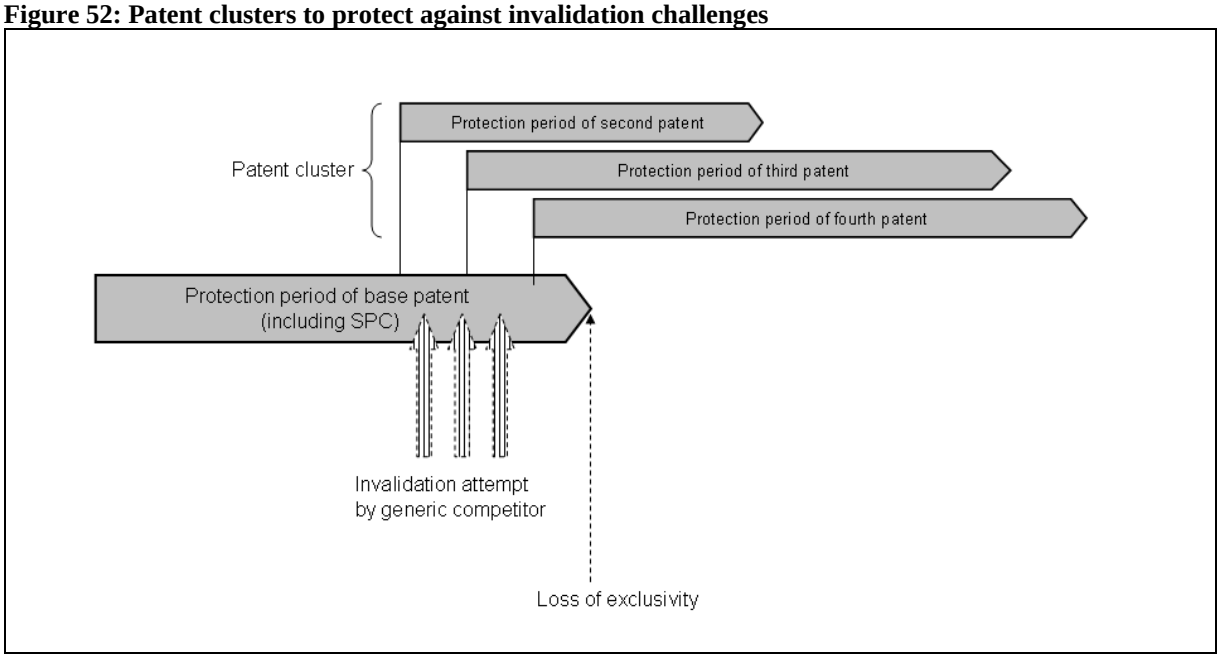
222 This section focuses on patent strategies employed by originator companies. Patenting strategies may also be employed in the context of life cycle management, i.e. a commercial switch to a follow-on product, yet this aspect will be looked at in more detail in Chapter C.2.6. While generic companies tend to file for patent applications nowadays as well, in particular for different salt forms of a particular substance when

- How can an originator company ensure that its (blockbuster) pharmaceutical product enjoys exclusivity at least until the end of the patent protection period of the base patent[223] in cases where generic companies threaten the base patent by challenging its validity?

- How can an originator company prolong the exclusivity period beyond the expiry of the base patent? This may serve to simply preserve continuous revenue streams, where no follow-on product has been developed or to bridge a gap between the loss of exclusivity and the market launch of a follow-on product which is intended to take over market shares of the old product (for life cycle strategies for follow-on products, see also Chapter C.2.6.).

(376) To ensure exclusivity at least until the end of the patent protection period of the base patent, originator companies may file for a multitude of patent applications (on process, reformulation, etc.) protecting the product in addition to the base patent with the aim of creating several layers of defence. Such a multitude of patents is often referred to as a "patent cluster". Thus where generic companies might manage to invalidate the base patent before its regular expiry they still cannot enter the market, if the originator company has succeeded in creating a multilayered defence or other patents surrounding the product. This is illustrated in Figure 52:

Figure 52: Patent clusters to protect against invalidation challenges



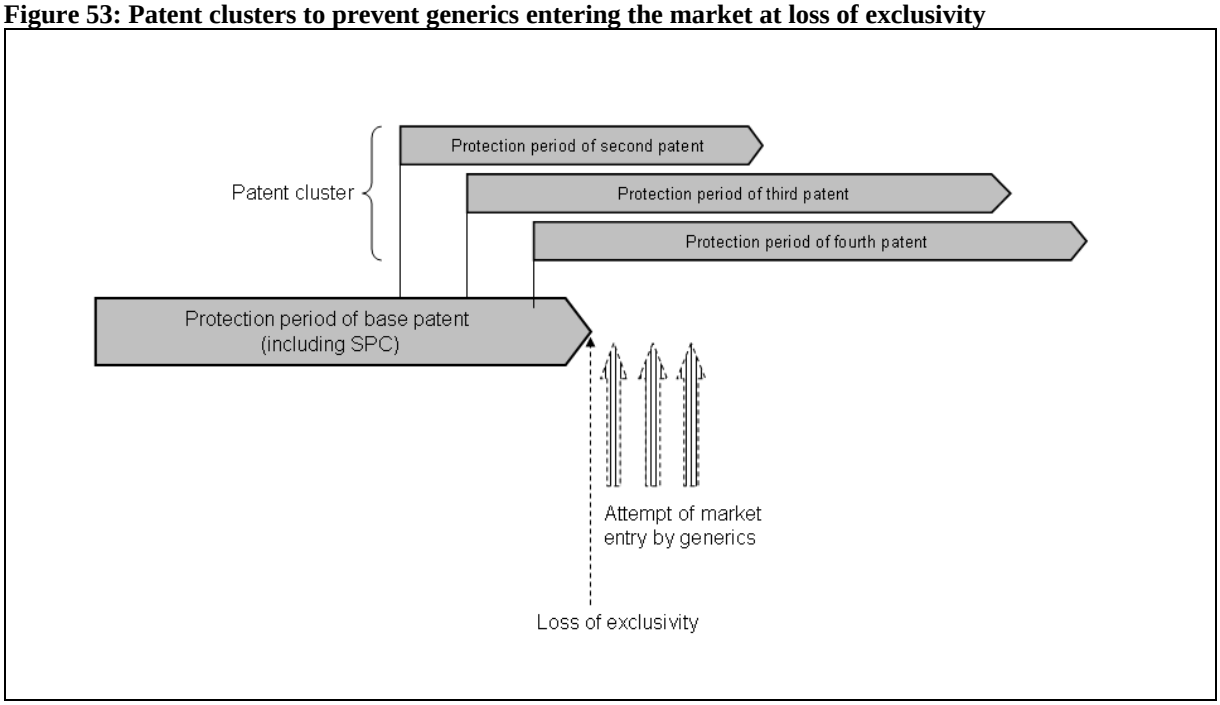
Source: Pharmaceutical Sector Inquiry

its base patent expires, the majority of patents are obviously being held by originator companies; see above Chapters B.1.2. and C.1.2.

223 While such base patents, usually claiming the invention of a new active substance, often constitute the first patent to protect a product, there are also cases where a secondary patent turns the active substance into a medicine.

(377) The second scenario shows a situation where an originator company obtains a multitude of patents (on process, reformulation, etc.) protecting the product, i.e. a patent cluster, during and towards the end of the protection period of the base patent, with the aim of keeping generics off the market beyond expiry of the first patent. This is illustrated by the following figure:

Figure 53: Patent clusters to prevent generics entering the market at loss of exclusivity



Source: Pharmaceutical Sector Inquiry

(378) It goes without saying that for both scenarios a company can rely on the same patents constituting the patent cluster surrounding the base patent. Thus, the scenarios overlap to the extent that the same set of patents may (i) disable generic entry before the end of the protection period stemming from the base patent, while they may also (ii) postpone generic entry after the base patent expired. Under certain circumstances the patent strategy might also pursue a more specific objective, namely to facilitate the switch to follow-up inventions or second generation products, criticised as "evergreening" by the generics industry, which will be analysed in more detail in Chapter C.2.6. below.

(379) A patent cluster may consist of granted patents as well as pending applications. Under certain circumstances, originator companies may also multiply the number of pending applications by filing for divisional patent applications dividing out from a parent patent application one or several (narrower) applications, which, after that division, all have a procedural life of their own, however, without extending the protection period of the parent application.

(380) Furthermore, according to Article 67 of the EPC in connection with Article 64 thereof, an application can from the date of its publication provisionally confer upon the applicant the protection of a patent, including damage claims, if provided for under national law. This is also applicable for divisional applications.

(381) In the following, patent cluster and divisionals are analysed, before their intended effects are examined.

2.1.2. Patent Clusters

(382) Nowadays it can be observed that originator companies' patent applications may be very broad in scope and claim a multitude of different innovations surrounding the original compound, including e.g. formulations, dosage regimes, processes etc. [224]

(383) For some companies this constitutes a change, as the following quote of an originator company illustrates:

> *"Before end 80s: Products mainly NCEs which where protected by the one patent- […]*
>
> *Late 80s – early 90s[…] Expansion of the portfolio to cover lifecycle initiatives, to extend protection time for product and the brea[d?]th of the protection trying to keep competition further away."*

(384) Of the 43 originator companies asked, seven stated that they did not have specific patenting strategy documents. The remaining 36 submitted such documents indicating that as a general policy they filed for a multitude of patent applications surrounding the first patents of a successful compound and its product in order to protect their position. The use of patent clusters is illustrated in a strategy document from an originator company:

> *"Clustering – protecting the companies (sic) products and processes…Clustering involves three components*
>
> *- Broad Scope*
>
> *- Maximizing Patent Term through innovation*
>
> *- Layered protection"*

(385) As the analysis of patent portfolios in Chapter C.1.2. confirmed, many INNs, in particular the commercially important ones, are surrounded by a multitude of patents and patent applications. The analysis showed that the number of granted patents and pending applications significantly increases with the value of the INN, in particular as regards the 20 top-selling INNs. In fact, blockbuster medicines can even be protected by up to 1,300 patents and applications EU wide. The ratio of primary to secondary patents (and their applications) is 1:7. As mentioned earlier, as regards to the top 20 INNs by total sales, claims of their secondary patents mostly concern formulations, processes and non-formulation products (excluding NCEs), such as salts, polymorphic forms, particles, solvates and hydrates.

(386) In this context, another originator company explained:

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[224] For the different types of patents in the pharmaceutical sector see Chapter B.2.1. and Annex: Claim Types (Annexes to Chapter B).

> "To maximize patent coverage on our commercial products, patent applications will also in general be filed to cover any novel potentially commercially important aspect of products such as processes, formulations, additional pharmaceutical or other indications and salts/solvates/physical forms (so called 'secondary' or 'subsidiary' patent protection)."

(387) The consequence of high density of products is the creation of a web of patents. In such a situation any attempt to develop a generic version of the medicine in form of a salt, a crystalline or amorphous form would inevitably infringe a patent (for example a patent for the relevant salt, crystalline or amorphous form of the medicine).

(388) Originator companies could thus use their web of patents to prevent or delay generic entry, as illustrated by the following originator company's quote:

> *"We were recently successful in asserting the crystalline form patent in [name of country], where we obtained an injunction against several generic companies based on these patents by 'trapping' the generics: they either infringe our crystalline form patent, or they infringe our amorphous form process patent when they convert the crystalline form to the amorphous form. […] The availability of 'trapping' strategy will be evaluated on an on-going basis."*

(389) In a similar way the following quote of an originator company demonstrates how salts and intermediates are used in order to create such blockades:

> *"I suppose we have all had conversations around "how can we block generic manufacturers". […] Don't play games in patenting new salt forms too late, the generics are starting earlier and earlier. Get claims on key intermediates that cover a number of routes. Process patents are not the biggest block but can put generics off if a superior chemistry job is done."*

(390) This quote also confirms that timing is of crucial importance. As shown above, many patent applications are filed in the period prior to lapse of patent protection of the existing product, possibly in an attempt to prolong the originator's term of protection. Typically, the relevant patent applications are filed in anticipation of imminent generic entry. This is evidenced by the following quote of an originator company:

> *"Our intelligence reveals that [generic company name] is developing a [salt form] of [patented pharmaceutical]. […] Fortunately we had anticipated the possibility of such a threat and last year filed several applications to alternative salts, including two for the [salt form]."*

(391) In fact, the analysis in Chapter C.1.2. confirms that patent applications are filed at regular intervals over a 20-year period following the first filing of an application for a given INN. Many of the top-selling INNs, i.e. those which generate substantial revenues, do not have a traditional patent portfolio life cycle. Instead, a significant increase in the number of patent applications filed is seen towards the end of the lifetime of the first patent in the portfolio.

(392) It has to be pointed out that an increase in secondary patents may be a sign for incremental innovation, which can be of significant importance. Following the filing of a basic patent application, further research into a particular development candidate (or

series of candidates) can give rise to the need for further patent protection for improvements of the basic active agent such as salt forms, metabolites or polymorphs. Similarly, problems with the administration of a therapeutic agent might lead to the need for formulation patents, whilst clinical trials may reveal new medical uses.

(393) However, a consequence flowing from filing numerous patent applications in order to create patent clusters around one product can also be an increase of weak patents. Many generic companies complained that novelty and inventive step requirement for secondary patent applications were too easily considered to be met by the EPO.[225] This seems to be confirmed by the fact that in the patent litigation cases between originator and generic companies reaching a final judgement, the majority of litigated patents were revoked.[226]

(394) Remarks by originator companies themselves indicate doubt as to the inventiveness and strength of their patents and suggest that the purpose of obtaining secondary patents was to keep generic competitors off the market, as is illustrated by the following quote taken from an inspection document:

> *"Late 80s – early 90s […]*
>
> *- Some of those patents are inevitably more vulnerable and more likely to be challenged [...]*
>
> *- Strategy – better to have patent which might not be "rock solid" than no patent.*
>
> *All patents and applications create a hurdle/problem for a competitor […]"*

(395) The originator company goes on to specify that nowadays the weakness of patents is taken into account when seeking to extend the protection period:

> *"Today [...]*
>
> *Inevitably there will be patents covering products on the market that can be, and will be challenged […] The strategy today is to try and provide a solid protection for the substance (has a limited time though) and a portfolio protecting different aspects of product providing extended protection both in brea(d)th and time but inevitable less solid and robust."*

(396) In general, originator companies will be very discrete about the relative strength or weakness of their patents and urge their employees not to commit any evaluation of their patents on paper, as the following quote from internal communications of an originator company shows:

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225 For further details see Chapter D.1.

226 For further details see Chapter C.2.2.

> *"I am sure you are aware that we prefer to communicate opinions regarding the strength of our patent property verbally, rather than in writing, which can result in an overly wide circulation, and no doubt you will bear this in mind when advising your regulatory colleague."*

(397) Generic companies increasingly view the practice of broad patenting of secondary patents around the basic product, which they often describe as "patent thickets", as an obstacle, which is only being pursued in order to *de facto* extend the exclusive position of the originator in respect of the active ingredient.[227]

2.1.3. Divisional Patent Applications

(398) The increased filing of divisional patent applications, in particular before the EPO, has been an object of complaints by the generic industry as a potential instrument to prevent or delay generic entry.

(399) A divisional patent application is created where the applicant, either voluntarily or at the request of the examining office, divides out from a patent application ("parent patent application") one or several (narrower) patent applications ("divisionals"). Such a division must be undertaken as long as the parent patent application is still pending. However, once created, a divisional has a life of its own, i.e. even if the parent patent application is refused or revoked, the divisional would still be pending. The divisional will have the same priority and application date as the parent patent application. In other words, if granted, a divisional will, in principle, provide the same duration of patent protection as the parent application. This procedure is applicable to primary as well as secondary patents.[228]

(400) Of the 43 originator companies addressed, eleven companies declared that in the period 2000 to 2007 they had filed for divisional patent applications where the corresponding parent application had subsequently been refused or withdrawn. The numbers of individual divisionals varied between 1 and 30.

(401) The sector inquiry unearthed a number of situations, where stakeholders claimed that originator companies insisted on pursuing the grant procedure for divisional patents, even if the parent patent application was subsequently refused or withdrawn.

(402) For example, for some originator companies, the divisional appeared to be a means to expedite prosecution for certain more unproblematic or interesting claims, while other claims of the parent application might still be questioned by the EPO or be of less scientific or commercial interest to the applicant.

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227 For further details see Chapter D.1.

228 For further details see Chapter B.2.1.

(403) One purpose of divisional patent applications, namely to protect the existing product, is illustrated by the following reflection of an originator company in one of its strategy documents:

> *"Secondary patents*
>
> *What can be done apart from extending the basic patent on the active compound (API)? File divisionals or new applications relating to the specific API - narrower claims are easier to defend and enforce."*

(404) Another reason given by some companies for using divisionals where parent applications were subsequently refused or withdrawn was to gain more time to answer objections made by the patent office examiners to claims in the parent application. Thus one originator company explained:

> *"The divisionals were filed because the time granted by the examiner to reply to the objections against the patentability of the respective parent applications was not sufficient. Filing a divisional application in these cases gives more time for preparing the answers adequately."*

(405) Similarly another originator company explained:

> *"The divisional was filed in order to reset the acceptance deadline clock and allow more time for prosecution."*

(406) Generic companies pointed out that divisionals may be filed to prolong the period of legal uncertainty, since an applicant could use this procedure to "reset the clock" and gain more time for patent examination, thus extending the period where applications are pending.

(407) Generic companies emphasised that in such cases it is virtually impossible for them to predict when which divisional application will possibly be granted. As a consequence they are unsure as to what they can reproduce without infringing any patents, even if the parent patent application has been refused or revoked. This is particularly pertinent, as a divisional application, as already explained, can confer damage claims on the applicant.

(408) Of the 27 generic companies 16 claimed that they have had problems with divisional filings (12 of which inter alia referred to the same INN) as one generic company claimed:

> *"[…] mainly, because they are creating additional uncertainties on our projects."*

(409) Another generic company agrees with the assessment that divisionals mainly serve to create uncertainty in this context:

"Filing of divisional applications also enables the originators to maintain the uncertainty generated by parent patent application (that may be revoked by the EPO or at a national level). Multiple divisional patent applications combined with abusive patent litigation and preliminary injunctions hinder the development of generic medicines."

2.1.4. Intended Effects of Patent Clusters and Divisionals

(410) The intended effects of both patenting strategies as analysed above are identical: both patent clusters and divisionals seemingly serve to prevent or delay generic entry. While this, during the period of exclusivity, is generally in line with the underlying objectives of patent systems, it may in certain cases only be aimed at excluding competition and not at safeguarding a viable commercial development of own innovation covered by the clusters.

(411) An originator company issued internal guidelines as how to draft applications in order to ensure that generic entry is delayed or prevented:

"The description should include sufficient specific reproducible examples to make the scope of claim a reasonable generalisation of the examples. Our primary objective is to obtain claims that will be effective against generic competitors."

(412) The denser the web created by the patent clusters and/or the divisionals is, the more difficult it will be for a generic company to bring its generic version of the original pharmaceutical to the market. That is to say, even though the main patent protecting the product, e.g. the basic substance patent, may have expired, the generic version may still infringe one of the multiple patents surrounding the original pharmaceutical. This can occur either because patents cover all economically interesting or viable salt forms, enantiomers or formulations of the compound or all efficient ways of its manufacturing. In other words patent clusters and divisionals seem to be aimed at creating legal uncertainty for generic competitors, as the following quote from a generic company illustrates in relation to patent clusters:

"The entire point of the patenting strategy adopted by many originators is to remove legal certainty. The strategy is to file as many patents as possible on all areas of the drug and create a 'minefield' for the generic to navigate. All generics know that very few patents in that larger group will be valid and infringed by the product they propose to make, but it is impossible to be certain prior to launch that your product will not infringe and you will not be the subject of an interim injunction."

(413) An originator company's quote confirms this purpose:

"Purpose: Establish an effective barrier to generic competition by extending the term of the existing compound patent and by filing patents on further inventions that last beyond the expiry of the compound patent…The objective [of scope of patent claims] is to secure an optimal competitive position for [our company's] products in the market by blocking competitors."

(414) Another originator company specifically emphasises the delay function of secondary patenting:

"Secondary patents will not stop generic competition indefinitely but may delay generics for a number of years, at best protecting the originator's revenue for a period of time."

(415) Broad patenting by originator companies and legal challenges of these patents by generic companies can create a vicious circle: the generic company can no longer wait for the base patent to approach expiry in order to develop its generic version of the medicine, because it must fear that in the meantime the product is protected by additional secondary patents. As a consequence a generic company may start legally challenging those surrounding patents it deems to be the weakest.[229] The chance of several of these patents being annulled because of a lack of inventive step by the courts could lead originators to file for even more secondary patents at an earlier stage in order to reinforce a multi-layered defence against generics.

(416) The delay or outright blocking of generic entry may be either an immediate consequence of the patenting activity of the originator companies or can result from procedural enforcement of patent rights through notably patent litigations and settlements. The subsequent analysis will look at each of the scenarios.

2.1.4.1. Limitations of Generic Entry as an Immediate Consequence of Patenting

(417) As shown above, patent strategies can lead to significant uncertainty concerning the possibility of a legitimate and commercially viable generic entry. Patent clusters and/or divisionals may as such, without any further action by originator companies, thus delay generic entry until the patent situation is clearer or even discourage more risk sensitive generic companies from entering altogether.

(418) An originator company explained how it expected the use of its secondary patents to reduce generic uptake (and consequently to slow originator decline) over a relatively long period post-patent expiry:

"Key factors resulting in slow decline:

Patent factors: secondary manufacturing process patent or patent formulations result in limited (2-3) generic competitors over 2-3 years. […]

Key factors resulting in medium decline:

confusing or unclear molecule patent position combined with robust defence results in 2-3 generic competitors in first year."

(419) Likewise, delays are caused by divisionals in particular where an originator company keeps them pending for as long as possible and by potential follow-up disputes before the EPO and national courts, as one generic company explained in this context:

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229 For further details see Chapter D.1.

> *"The three divisional applications are identical or practically identical to each other. It can be expected that they will be held pending and – if possible be brought to issuance – one by one so there is a constant threat and uncertainty to generic companies over years. Several opposition proceedings are pending against the [number of divisional] patent. The opposition proceedings can be expected to take about four to five years. Thereafter, nullity proceedings before the […] Court are possible […], which can be expected to take another two to four years."*

(420) A second generic company pointed out:

> *"Obviously, [originator]'s strategy is to file numerous identical or practically identical divisional applications from one basic application – which has been found invalid by the EPO! – and keep them pending. Should the grant of one of them be denied, the other still pending applications are such a threat to the generic companies that many of them are extremely reluctant to enter the market. […] The grant [meant is: EPO decision on the patent application] can be delayed for years by [originator]."*

(421) Apart from causing delays, generated uncertainty may also lead to abandonment of development of generic versions as shown in the following testimony by a third generic company:

> *"The filing of divisional patent applications by another company has interfered with our plans to develop a generic pharmaceutical composition… On [date], the European Patent Office ("EPO") granted to [originator company] the European patent [number] related to the use of [INN] for treating [condition] in a [details of dosage], despite the fact that [earlier] an Opposition Division of the EPO revoked its parent patent related with the same dosage regime. The divisional European Patent EP [] is currently being opposed at the EPO by […] companies […]. The uncertainty generated by the decision granting European patent [number of patent above] forced our company to abandon the development project related to [originator's product name] generic drug […]."*

2.1.4.2. Procedural Enforcement of Patent Rights

(422) Patents are proprietary, exclusive rights and enforcing one's patents against parties infringing them is a legitimate procedural dimension of the material right granted to the patent holder.

(423) The preceding subsection showed that patent clusters and divisionals may deter or delay generic entry merely by their existence. In other cases, companies may proceed with the development of generic versions with a view to enter the market at risk. In such cases, patent clusters and also divisionals are an indispensable asset for originator companies' implementation of their procedural enforcement strategies. These strategies will typically lead to patent litigation, but can also result in settlements, as discussed in subsequent chapters.[230] Such patent positions may also be an argument originator

[230] For further details see Chapter C.2.4.

companies raise in their interventions vis-à-vis the marketing authorisation, pricing and reimbursement bodies etc.[231]

(424) The present subsection focuses on litigation as the most immediate aspect of procedural enforcement of patent clusters, as well as divisionals. Patenting strategies appear to be coupled with assertive, if not aggressive, effort of judicial enforcement.

(425) Originator companies, in their strategy documents and internal communication emphasise the necessity to enforce patents wherever they perceive an infringement by third parties, such as the following quote shows in an exemplary manner:

> *"We defend our patent rights vigorously against third party challenge with respect to validity and enforceability."*

(426) Another originator company put it more bluntly by saying:

> *"[…] we will legally exploit all opportunities to get generics out of the market."*

(427) This corresponds with the fact that the majority of patent litigation cases examined in the following section (54%) were initiated by originator companies.[232]

Patent litigation as signal to the generic companies

(428) An important part of this patent enforcement through litigation is signalling to the generics industry that patent infringements will not be tolerated by the patent holding originator company. As one originator company declared in its internal communication:

> *"We should as a matter of principle defend our intellectual property. Failure to do so will not only impact on sales of current generic products but will create a perception of weakness which may damage future patent expiries".*

(429) Sending such a signal relating to patent defence of the original product can be particularly important to an originator company where a second generation product is about to be launched, as follows from this internal communication at another originator company:

> *"My view is that we ask for interlockatory [sic] injunctions for two reasons: 1) […] 2) we send a strong signal to the generics that we haven't softened which is important for possible IP issues with [name of second generation product] in beginning [year]."*

Consequences of patent litigation for generic companies

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231 For further details see Chapter C.2.5.

232 For further details see Chapter C.2.2.

(430) For generic companies patent litigation with an originator company can in itself create obstacles to market entry namely by creating costs and by using interim injunctions, preventing the sale of the generic product. As described above, sometimes the threat of incurring substantial litigation cost or issuance of an interim injunction can in itself deter entry.

(431) While larger generic companies may have the financial resources for long and costly litigation – in fact some of the latter have reserved a significant part of their overall budget for litigation and damages – smaller generic firms may be affected more substantially by litigation. In fact, patent enforcement litigation can aim at financially overburdening them, in particular where the originator company obtains interim injunctions against the generic product being put on the market. This creates an uphill struggle for the generic firm, as its litigation costs rise without mirroring revenues from its generic pharmaceutical whereas the originator company will continue to collect revenues from its product.

(432) In certain cases, when enforcing patent clusters and/or divisionals, an originator company may bring numerous patent infringement actions against a generic company in several Member States on each supposed infringed patent, even where the originator company does not believe to have a chance of being successful. An illustrative example pointing in this direction, in particular with respect to obtaining an interim injunction, is the following internal communication at one originator company:

> *"Our strategy is clear. We want to send a signal (by applying for interim injunctions well knowing that we will not be granted a ban) that we do not accept early [generic] entry and then later we withdraw everything."*

Summary

The preliminary findings of the inquiry are that in recent years originator companies have changed their patent strategies. In particular, originator companies confirm that they aim to develop strategies to extend the breadth and duration of their patent protection.

One commonly applied strategy is filing numerous patents for the same medicine (forming so called "patent clusters" or "patent thickets"). Documents gathered in the course of the inquiry confirm that an important objective of this strategy is to delay or block the market entry of generic medicines. In this respect the inquiry finds that individual blockbuster medicines are protected by up to 1,300 patents and/or pending patent applications EU-wide and that, as mentioned above, certain patent filings occur very late in the life cycle of a medicine.

Patent clusters can lead to uncertainty for generic competitors as to whether and when they can start to develop a generic medicine without infringing one of the many (new) patents, even though patent holders admit internally that some of these patents might not be strong.

A second instrument used by originator companies appears to be filing "divisional patent" applications. Divisional patent applications are instruments allowing the applicant e.g. to split an initial (parent) application. Examination of divisional applications continues even if the parent application is withdrawn or revoked, which can add to the legal uncertainty for generic companies.

Enforcing patent rights in court is generally legitimate: it is a means of ensuring that patents are respected. The inquiry's preliminary finding is however that litigation can be an efficient means of creating obstacles in particular for smaller generic companies. In certain instances originator companies may consider litigation not so much on its merits, but rather as a signal to deter generic entrants.

2.2. Patent-Related Exchanges and Litigation

(433) It should be noted from the outset that enforcing patent rights as such is not objectionable. On the contrary, companies which benefit from patent protection are entitled to enforce their patent rights. However, this may be problematic under specific circumstances. The purpose of this section is to describe practices of enforcing and challenging patent rights before and out of court without drawing any conclusions as to their compatibility with EC competition law. This section first examines contacts and disputes between originator and generic companies out of court and then looks at patent litigation before the EU Member States' courts.

2.2.1. Patent-Related Exchanges between Originator and Generic Companies out of Court

(434) This section examines the enforcement of patent rights by originator companies through patent-related exchanges out of court. In particular, originator and generic companies were asked to report on all contacts and disputes[233] in which they were involved across the EU in the period 2000 to 2007 and which had not ended in litigation.[234]

(435) Classifying a given exchange between an originator and a generic company as a contact or dispute is not always straightforward and can be open to interpretations. Patent-related exchanges out of court can be amicable or more adversarial in nature (e.g. a warning letter).

(436) Contacts and disputes between an originator and a generic company may have an impact on the decisions of the generic company regarding the launch of a competing product. Although not (always) leading to court proceedings, such patent-related exchanges can have a dissuasive effect and thus affect planned generic entry, in particular as a result of the threat of costly litigation and the risk of the grant of interim injunctions and, eventually, damages.

(437) The present section will therefore examine the number of contacts and disputes concerning market entry of generic products which were initiated by originator and generic companies in EU Member States in the period 2000 to 2007 and the INNs most often invoked in such patent-related exchanges. The section goes on to look at the number of disputes started in the EU by category and type of the patent in dispute, and the percentage of disputes ending in settlement. Finally, an overview of the percentage of patent disputes in relation to the date of expiry of the disputed patent is provided.

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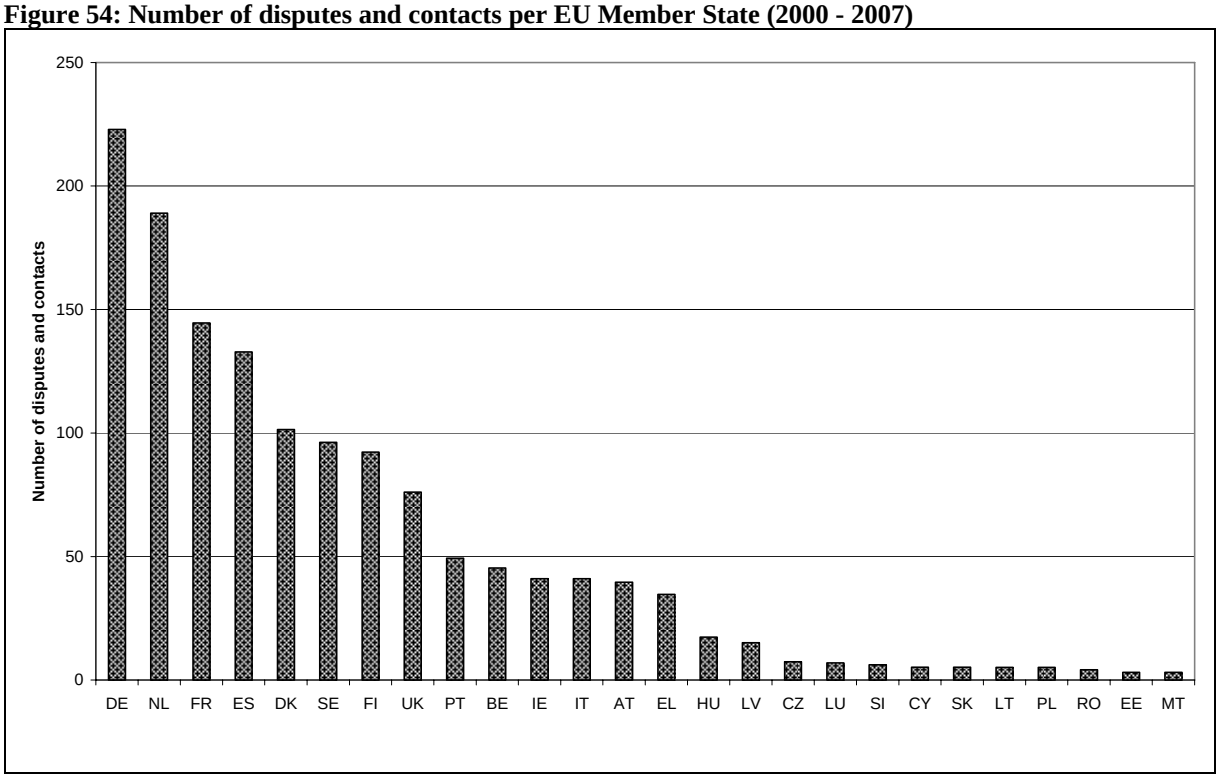
233 For the purpose of the sector inquiry, disputes are defined as referring to any exchange of views between an originator and a generic company in which, in particular, the actual or potential infringement, non-infringement or invalidity of one or several patents concerning a specific INN have been raised and which has not (yet) ended in litigation, whereas contacts refer to all out of court patent-related exchanges reported, which respondent companies did not classify as disputes.

234 The data provided by respondent companies are based on the records available at the date of companies' replies to the requests for information.

2.2.1.1. Number of Contacts and Disputes between Originator and Generic Companies in the EU and INNs Most Often Concerned by Contacts and Disputes

(438) Figure 54 provides an overview of the number of contacts and disputes (patent-related exchanges) initiated by originator and generic companies per EU Member State in the period 2000 to 2007. Respondent companies reported a total of 1,337 disputes and contacts initiated in the EU in the period under review.[235]

Figure 54: Number of disputes and contacts per EU Member State (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(439) As shown above, the highest number of disputes and contacts concerned Germany (223 or 16% of the total), followed by the Netherlands (189 patent-related exchanges or 14%), France (145 exchanges or 10%) and Spain (133 exchanges or approximately 10%). After these countries come Denmark, Sweden, Finland and the United Kingdom, with roughly 5 to 7% (70 to 100) of patent-related exchanges.

(440) Figure 55 presents an overview of the top 10 INNs which were most often the object of contacts and disputes between originator and generic companies in the EU in the period 2000 to 2007. Respondent companies reported a total of 1,337 disputes and contacts which concerned 80 INNs.

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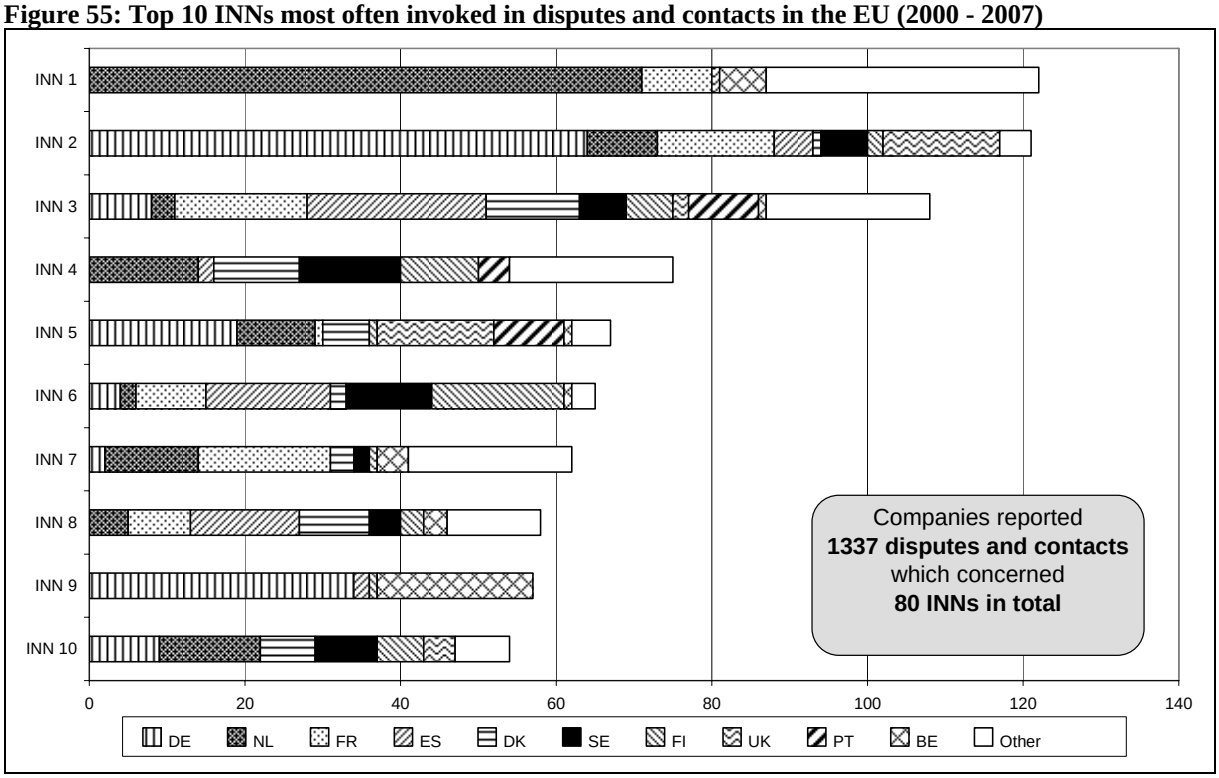
[235] The total number of disputes and contacts shown on Figure 52 above is slightly higher (1390) since the disputes and contacts reported by respondent companies as concerning EU-27 were equally added to all the Member States.

Figure 55: Top 10 INNs most often invoked in disputes and contacts in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(441) It should be noted that contacts and disputes relating to the top 10 INNs listed in Figure 55 above accounted for 59% of all contacts and disputes between originator and generic companies reported during the period examined.

(442) Contacts and disputes concerning INNs 1 and 2 were the most frequent, each accounting for 9% of all patent-related exchanges. INNs 3 and 4 were the object of 8% and 6% of patent exchanges, respectively. INNs 5 to 7 were invoked in 5% of patent-related exchanges, compared to 4% for INNs 8 to 10.

(443) On the major national markets, INNs 1 and 3 were among the best-selling medicines (T50) and among the best-selling medicines which faced loss of exclusivity (E75).[236] Overall, each of the top 10 INNs belonged to at least one of the two aforementioned groups.

(444) As shown on Figure 55, contacts and disputes concerning INN 1 and relating to the Netherlands accounted for the majority (71%) of all patent exchanges for this INN. Furthermore, most of the patent exchanges concerning INN 2 involved Germany (53%), France and the United Kingdom (12% for each). INN 3 was the subject of a substantial number of contacts and disputes concerning France and Spain (18-21%), while most patent exchanges concerning INN 4 involved the Netherlands, Sweden and

[236] For more information on the T50 and the E75 lists, please refer to the Annex: Methodology (Annexes to Chapter A).

Denmark (19, 17 and 15% respectively). A similar pattern of unequal geographical distribution is also seen for the remaining INNs.

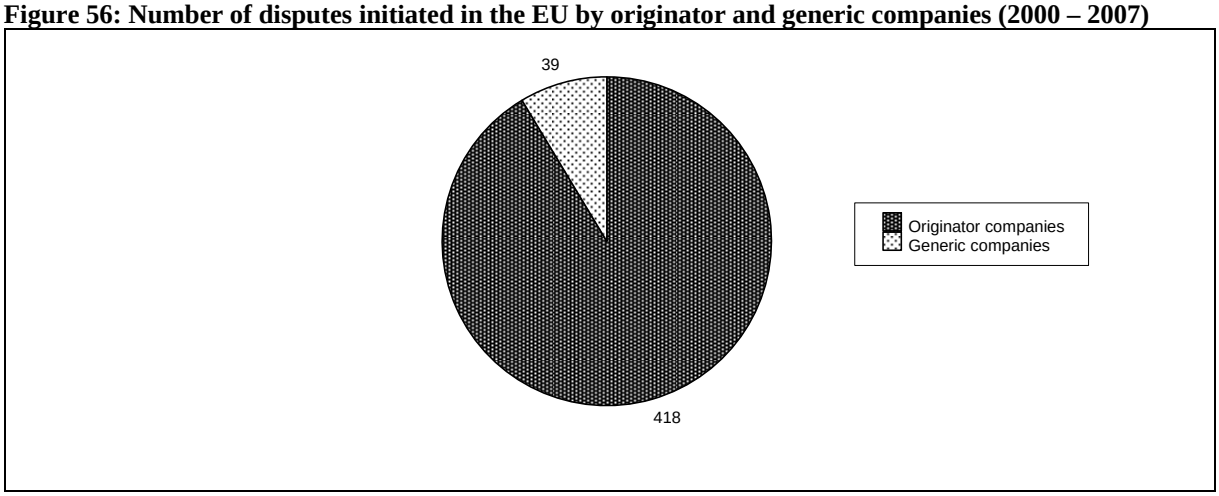
(445) All of the top 10 INNs were the object of contacts and disputes in at least four Member States (and most often in more than seven Member States). The reasons for which a dispute on any given INN was initiated in a specific Member State appeared to be case-specific.

(446) Thus, for the same INN, one observed a significant number of (often parallel) contacts and disputes between originator and generic companies concerning various Member States. This multiplication of contacts and disputes across Member States is a direct consequence of the current European patent system which lacks a unified Community-wide patent and is instead based on a bundle of national patents.

2.2.1.2. Number of Disputes Initiated in the EU by Originator and Generic Companies

(447) Figure 56 provides an overview of the number of disputes initiated by originator and generic companies in the EU in the period 2000 to 2007. Companies reported a total of 457 disputes initiated in the EU in the period examined. Data provided shows that nearly all disputes (91%) were initiated by an originator company, whilst generic companies launched only 9% of all disputes.

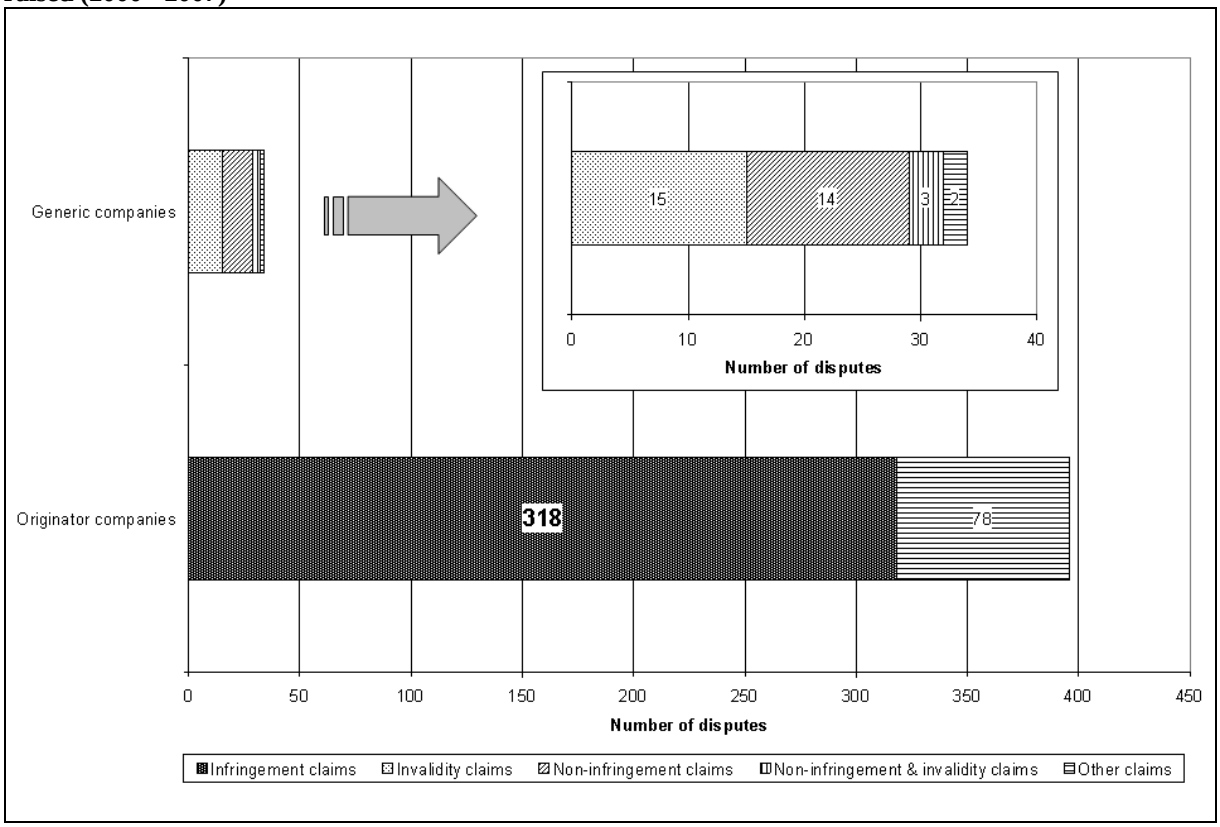
Figure 56: Number of disputes initiated in the EU by originator and generic companies (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

(448) Figure 57 illustrates the number of disputes initiated by originator and generic companies in the EU in the period 2000 to 2007 by type of claim raised (infringement, invalidity, non-infringement, non-infringement and invalidity, and other).

Figure 57: Number of disputes initiated in the EU by originator and generic companies by type of claim raised (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(449) As already indicated above, nearly all reported disputes (91%) were initiated by an originator company.[237] This high percentage could be explained in terms of originator companies' strategies aimed at protecting patent rights and initiated at the point when an originator company becomes aware of the planned entry to the market by a generic company (e.g. by informing the generic competitor of its patent rights, the consequences of patent infringement and demanding that the generic product be withheld from the market). In 74% of disputes initiated by an originator company, the originator company claimed that the generic company was infringing its valid patent rights. The remaining 26% of disputes dealt with other claims.[238]

(450) In contrast, only about 9% of all reported disputes were started by a generic company. Those disputes raised claims of invalidity (15 instances), non-infringement (14 instances), non-infringement combined with invalidity (3 instances) and other claims (2 instances).

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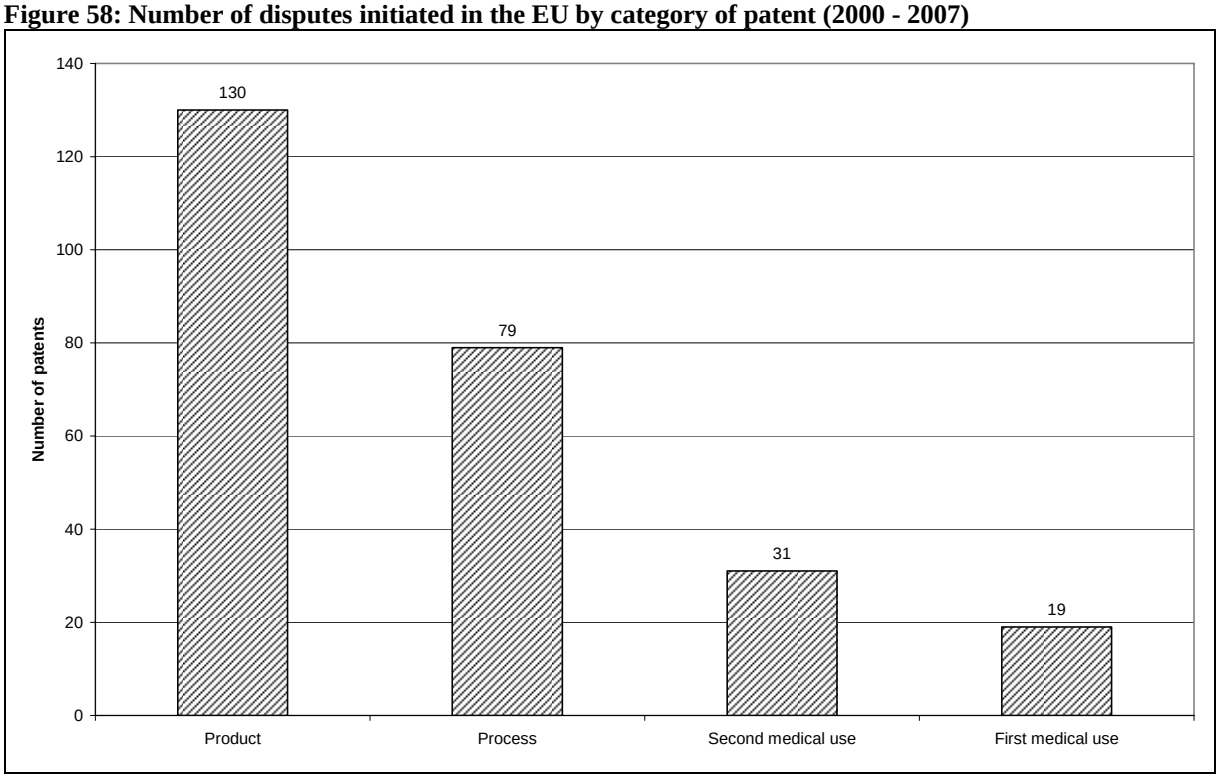
237 The total number of disputes initiated by originator and generic companies in the EU in the period 2000 to 2007 as shown on Figure 57 above is slightly lower than the one indicated on Figure 56. This may be explained by the lack of indication, for some of the disputes reported, of the type of claim raised.

238 Respondent companies have indicated that such other claims raised in disputes concerned *inter alia* letters drawing the attention of the generic company to the existence of the relevant patent.

2.2.1.3. Number of Patents in Dispute by Category of Patent

(451) Figure 58 illustrates, by category of patent, the number of patents which were the object of a dispute in the EU in the period 2000 – 2007.[239]

Figure 58: Number of disputes initiated in the EU by category of patent (2000 - 2007)



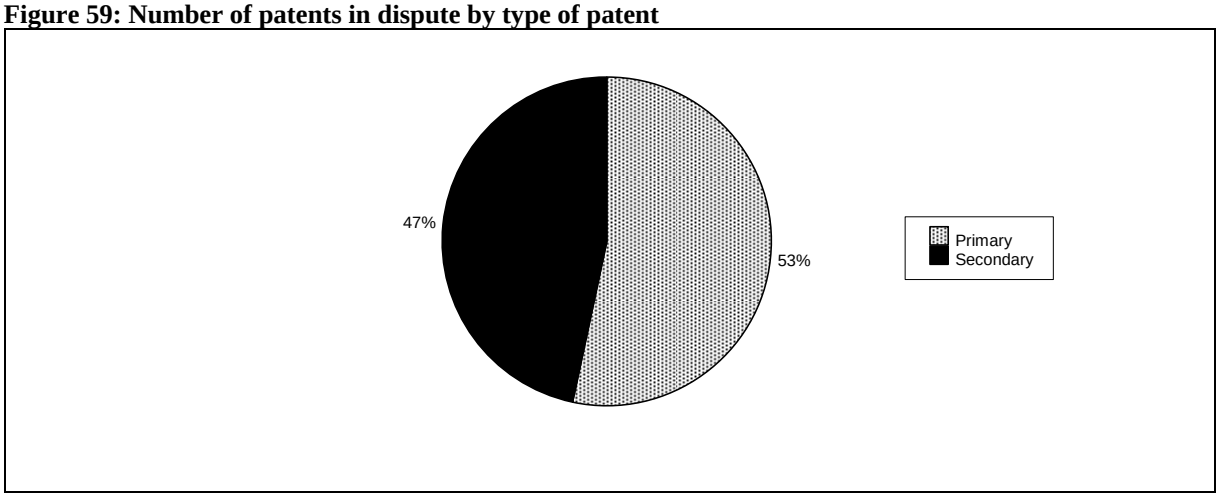
Source: Pharmaceutical Sector Inquiry

(452) Companies reported a total of 187 patents which were concerned by disputes in the period under review. As Figure 58 shows, more than two-thirds of disputed patents were product patents (70% or 130 patents). Process patents represented the second most disputed category of patents (42% or 79 patents). The percentage of first and second medical use patents in dispute was significantly lower (10% and 17% respectively). A similar pattern, described further on in this chapter (see Figure 69), was also observed in relation to litigated patents.

(453) As Figure 59 shows, primary patents were the object of disputes between originator and generic companies in over half (53%) of all disputes reported whilst the remaining 47% of all disputes involved secondary patents.

[239] For more information on patent categories see Annex: Claim Types (Annexes to Chapter B). It should be noted that one patent may fall under one or more different patent categories. Hence, due to multiple counting, the aggregate number of disputed patents, if added across the four patent categories as listed in Figure 58, will exceed the total number of disputed patents reported by respondent companies.

Figure 59: Number of patents in dispute by type of patent

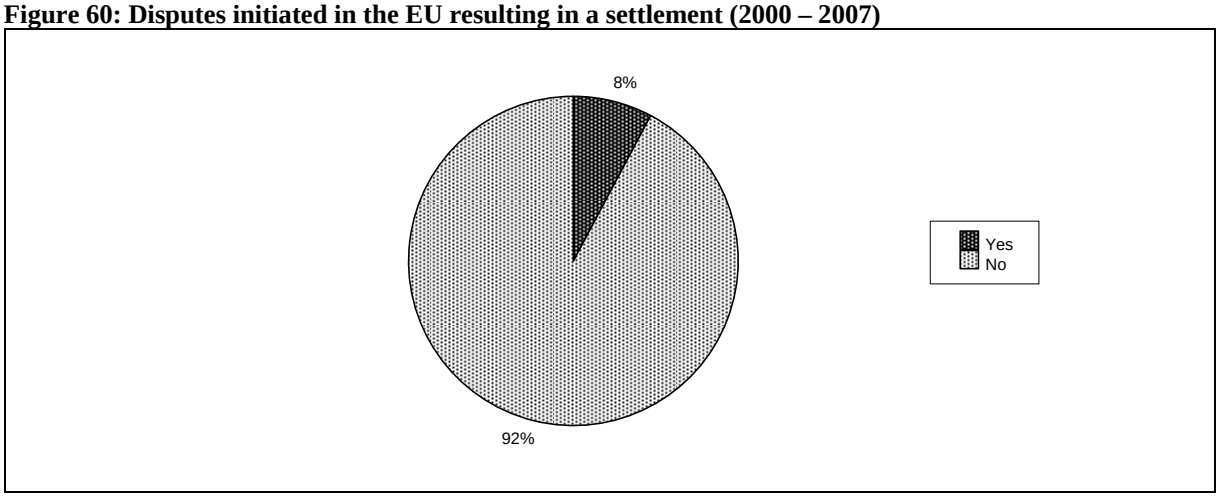


Source: Pharmaceutical Sector Inquiry

2.2.1.4. Disputes Resulting in Settlement

(454) Figure 60 shows that only 8% of disputes between originator and generic companies ended in a settlement. This can be seen as one illustration of the fact that, even without reaching the stage of litigation, patent-related disputes may have effects on generic entry.

Figure 60: Disputes initiated in the EU resulting in a settlement (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

(455) The disputes, reported in this section, which did not lead to a settlement were either not further pursued by originator companies (e.g. no legal action was brought to court) or may have led to litigation or ended with a settlement after 1 January 2008.[240]

(456) An originator company may decide not to further pursue a dispute because the generic company has refrained from entering the market. Even if there is generic entry, an

[240] In the requests for information, companies were asked to report the disputes between originator and generic companies, which had led to litigation, in the section concerning patent litigation.

originator company may still discontinue the dispute it has initiated if the lack of infringement has been established, or if it is not convinced of the existence of an actual infringement or of the strength of its patent.

(457) In the example given below, an originator company initiated a patent dispute when it became aware of the marketing of a competing generic product.

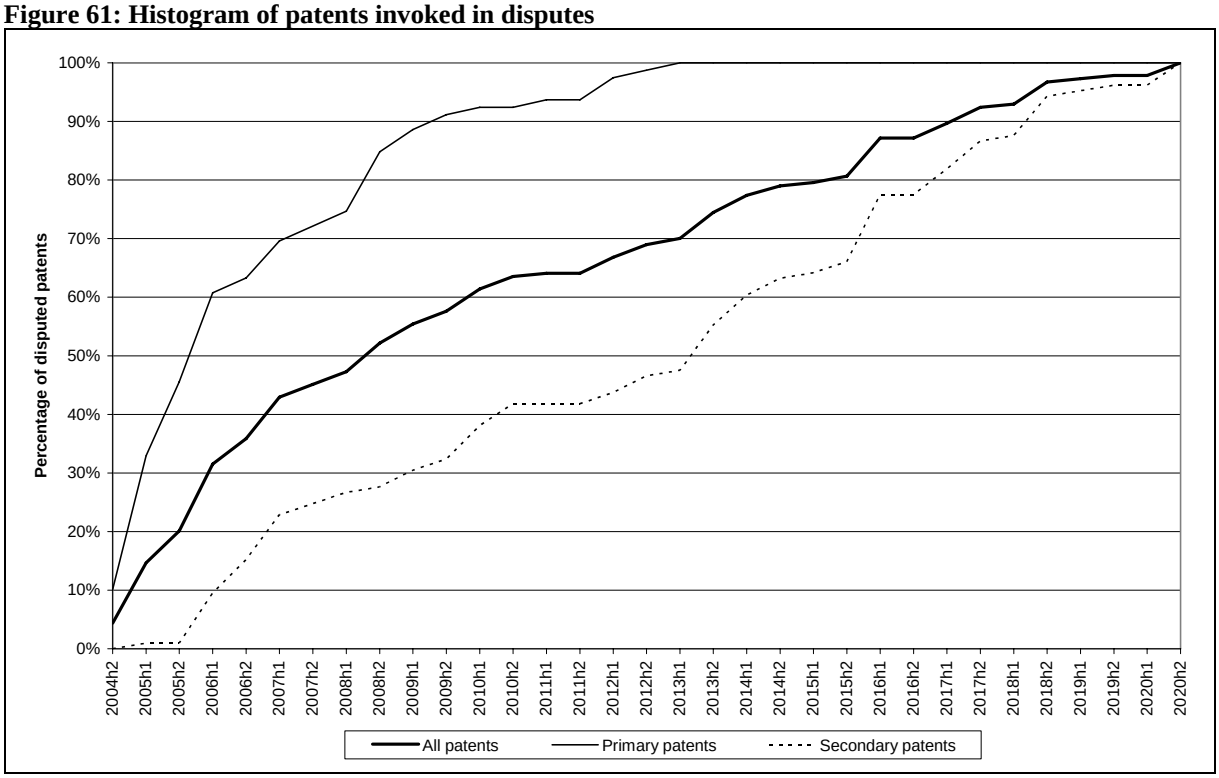
> *"It has come to the attention of our client that you [generic company] have received a marketing authorisation for [originator's product] and [originator's product]. [...] At the request and on behalf of our client [originator company], we seek your confirmation in writing that you [generic company] will refrain, for the duration of [the originator company's] industrial property rights from producing, offering and placing on the market or using [originator's product] and [originator's product]. We should receive your written confirmation by [date]. Our client explicitly reserves the right to initiate patent litigation in the future in relation to unlawful patent use."*

(458) However, the originator company did not pursue its claim further, even though the generic product remained on the market. Even if many disputes are not further pursued by originator companies, they can have a strong dissuasive effect on the entry of generic products on the market, in particular as a result of the threat of costly litigation and the risk of the granting of interim injunctions and, possibly, damages. The data reported by respondent companies on patent litigation show that over half of litigation proceedings were preceded by prior disputes and/or contacts. This illustrates the strength of the link between patent-related exchanges and patent litigation.

2.2.1.5. Histogram with Patent Expiry Dates of Patents in Dispute

(459) Figure 61 provides a histogram of patents in dispute in the EU in the period 2000 to 2007 relative to patent expiry dates. It distinguishes between primary and secondary patents. The vertical axis shows expired patents as a percentage of the total number of disputed patents, while the horizontal axis lists the semesters in which individual patents were or are about to expire.

Figure 61: Histogram of patents invoked in disputes



Source: Pharmaceutical Sector Inquiry

(460) Figure 61 shows that primary patents, which were the object of a dispute, have an earlier expiry date than secondary patents in dispute. For example, 92% of disputed primary patents will have expired by the first half of 2010 which stands in stark contrast to the 38% of secondary patents in dispute that were reported by originator companies to expire by the same time. This would indicate that secondary patents are the object of disputes much earlier in the process when the relevant expiry dates are relatively further away. The latest expiry date of an individual secondary patent reported in the section on disputes by respondent companies falls in the second half of 2020. Hence, it appears that originator companies tend to invoke secondary patents which were granted relatively recently.[241]

2.2.2. Litigation

(461) This section examines the enforcement and challenge of patent rights through litigation before EU Member States' courts. More specifically, originator and generic companies were asked to report on all patent-related litigation, to which they were a party, and which was launched in the EU in the period 2000 – 2007.

(462) The questionnaires that were sent to companies defined patent-related litigation as covering any type of court proceedings or other formal adversarial proceedings with

241 For further information on patent strategies used by originator companies see Chapter C.2.1.

the exception of patent opposition proceedings.[242] In particular, questions were asked concerning the main patent-related legal actions such as the action for infringement, the action for declaration of non-infringement and the action for annulment[243] (also sometimes referred to as "invalidity action").

(463) The action for infringement is launched by an originator company with the aim of having the court find that the generic product is (imminently or actually) infringing the originator's patent and prohibit its production and commercialisation until the date of patent expiry. The action for a declaration of non-infringement is brought (independently or as a counter-action) by a generic company seeking a declaration by the court that its product does not infringe the originator company's patent (e.g. because of the difference between the two products, processes etc.). This allows the generic product to enter or remain on the market free of patent claims.

(464) Generic companies may also bring an action for annulment of the originator company's patent, which would allow them to enter the market unless the product is protected by other (valid) patents.[244] The grounds for nullity most often invoked by generic companies concern the lack of novelty and/or inventive step of the originator product. If the patent is annulled, it is considered retroactively to be abolished *erga omnes.*

(465) A variety of scenarios of litigation may take place. Either the originator or the generic company may initiate litigation against the other party, bring a counter-action or merely defend themselves.[245]

(466) Patent litigation can have an impact on market entry by generic companies. In particular, the threat of lengthy and costly patent litigation across EU Member States can dissuade smaller generic companies from launching a competing product before patent expiry, even if they consider the patent to be invalid or not to have been infringed. Most importantly, interim injunctions can have a very serious effect on generic companies whose product is taken off the market and all further production and commercialisation are forbidden until the main action is decided.[246] This becomes particularly relevant when examined in the light of originator companies' overall patent

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242 For further information on patent opposition proceedings see Chapter C.2.1. and 2.3.

243 For further details see footnote 121.

244 For more information on the regulatory framework see Chapter B.2.1.

245 For instance, the generic company may bring an action for a declaration of non-infringement and/or an action for annulment and launch its product once generic entry has been cleared (or the patent has been annulled by the court). The generic company may also launch at risk while its action for non-infringement and/or annulment is still pending or launch its product without filing any action at all. In the event of a generic launch at risk before patent expiry, the originator company may seek to defend its patented product by bringing an action for infringement (and possibly requesting that interim injunctions be granted).

246 Or until the patent expiry date (if it precedes the final judgement) or until such time as the judge may decide.

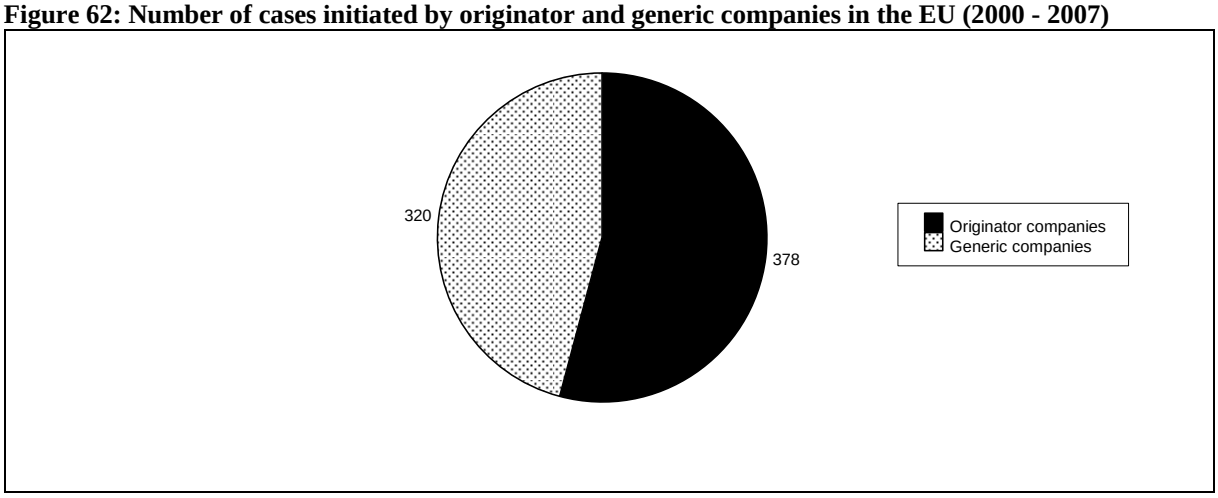
and life cycle strategies which are aimed at maximising profit and shielding their products from competition.

(467) The present section will examine the patterns of patent litigation in relation to generic entry (e.g. the total number of litigations initiated in the EU per launching party and per Member State, the duration of litigation, the types and categories of litigated patents etc.) and the INNs which were most often the object of litigation. It will also analyse the final outcome of patent litigation on the merits and the patterns of interim injunctions. Finally, this section will look at the cost of external legal advice in patent matters.

2.2.2.1. Number of Patent Litigations Initiated in the EU and per EU Member State

(468) As illustrated in Figure 62, companies reported a total of 698 separate [247] cases of patent litigation which were initiated [248] in the EU in the period 2000 to 2007. Of the total reported, the cases initiated by originator companies accounted for 54% (378 cases) as against 46% (320 cases) launched by generic companies.

Figure 62: Number of cases initiated by originator and generic companies in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(469) As shown in Figure 62, generic companies initiated a substantial number of litigations (although fewer than those started by originator companies). This can be explained by the fact that generic companies' have been proactive in initiating litigation to obtain a

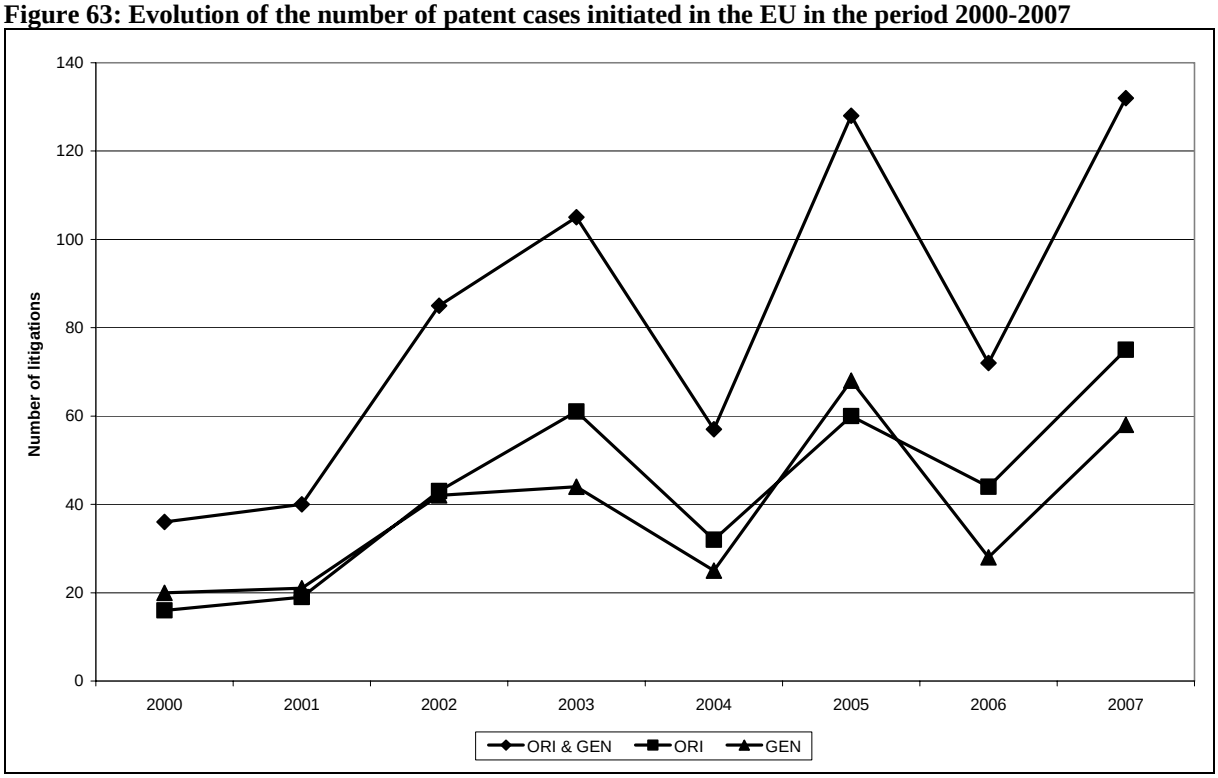
247 The term "separate litigation" refers to patent litigation cases in one Member State identified by a single court reference number independently of the number of patents concerned or parties and instances involved. Hence, a legal action brought in one Member State against several different defendants concerning several patents and examined by several instances is counted as one separate litigation if it is identified by the same, unique court reference number. Throughout this chapter, all references to patent litigation denote separate litigation cases.

248 Throughout this chapter, "initiation of litigation" refers to the first legal action started by a party which is the one taken into account for statistical purposes, independently of the existence of a counter-action (not included in the calculations).

declaration of non-infringement of the relevant patent or its annulment in order to clear generic entry.

(470) Figure 63 illustrates the trend in the number of patent litigations initiated in the EU by originator and generic companies in the period 2000 to 2007.

Figure 63: Evolution of the number of patent cases initiated in the EU in the period 2000-2007



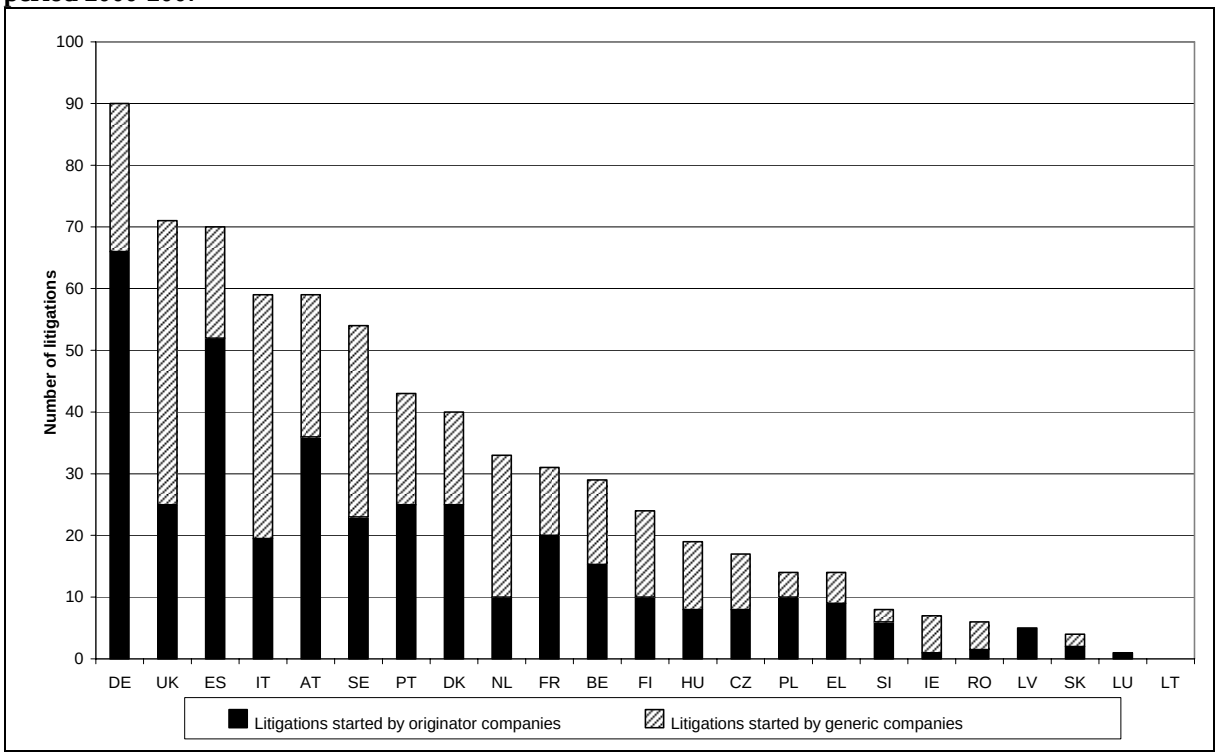
Source: Pharmaceutical Sector Inquiry

(471) As regards all patent litigation cases in general, Figure 63 shows that there was a substantial overall increase in the number of cases, which rose nearly fourfold from 36 in 2000 to 132 in 2007. The increase in the number of patent litigations was particularly marked in the initial period from 2000 to 2003 with the number of patent litigations increasing nearly three times. The year 2004 saw a sharp temporary decline in the number of patent cases by nearly half (by 48 cases) compared to 2003. However, in 2005, the number of patent cases sharply increased again more than twice (by 71 cases) only to fall by 56 cases in 2006. Nevertheless, this drop was reversed once again in 2007 when an increase of more than 60 cases was observed. At this point, the number of patent cases reached its highest in the period examined (132).

(472) The trend in the number of patent litigations initiated either by originator or generic companies (as shown on the graph) followed an essentially similar pattern.

(473) Figure 64 illustrates the distribution in the number of patent litigations initiated by originator and generic companies in the period 2000 – 2007 for all EU Member States.

Figure 64: Patent litigations initiated by originator and generic companies per EU Member State in the period 2000-2007



Source: Pharmaceutical Sector Inquiry

(474) We can see that Germany had by far the highest number of cases in the EU (90 cases), followed by the United Kingdom (71 cases) and Spain (70 cases). Between 40 and 60 patent litigations were initiated in Italy and Austria (59 cases), Sweden (54 cases), Portugal (43 cases) and Denmark (40).

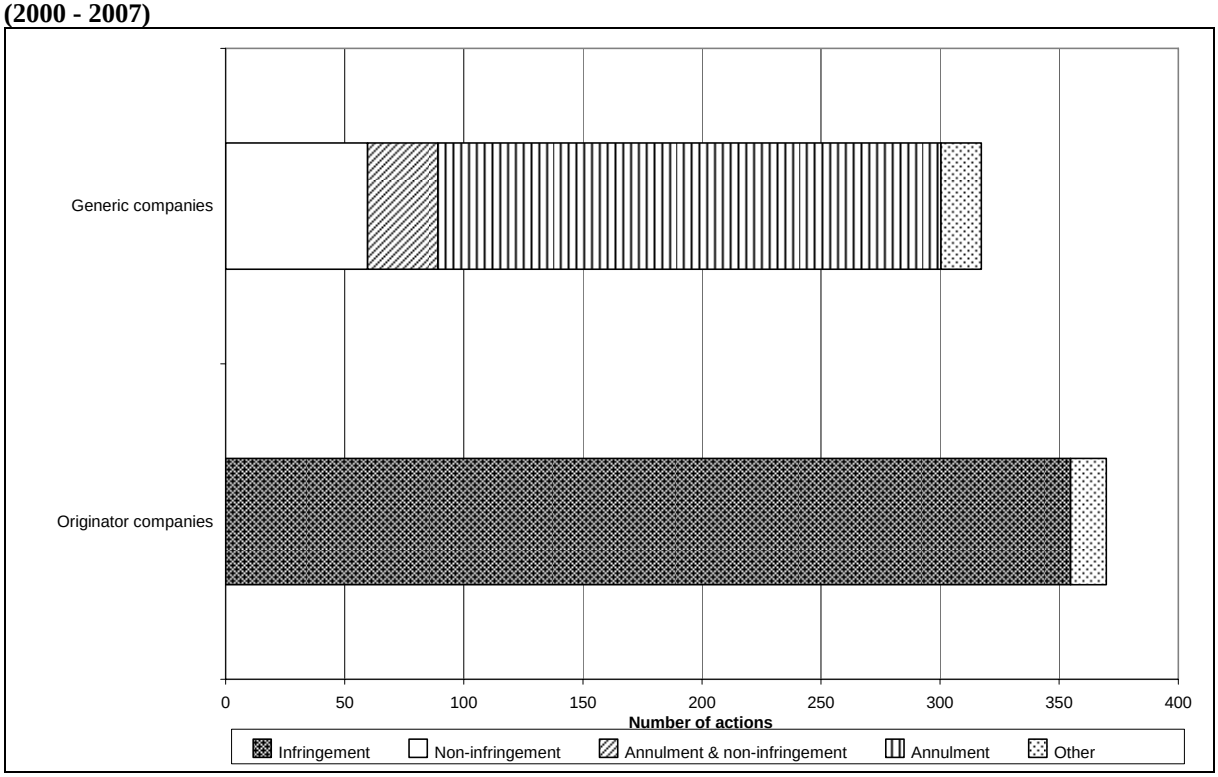
(475) Figure 64 shows that, in most Member States, the majority of cases were initiated by originator companies. Hence, originator companies were by far the most active litigators in Slovenia, Spain, Germany and Poland (with 71 to 75% of initiated cases). Likewise, originator companies launched a substantially higher number of cases in France, Greece, Denmark and Austria (61 to 65% of all cases). All reported cases in Latvia were initiated by originator companies.

(476) However, there are several Member States where the opposite situation was observed. Whilst the United Kingdom had the second highest number of patent litigations launched in the EU from 2000 to 2007, the vast majority of cases were initiated by generic companies (65 %). This contrasts sharply with the situation in Germany and Spain, as previously discussed. Like the United Kingdom, Italy had the fourth highest overall number of reported patent litigations in the EU, but litigations initiated by originator companies accounted for only 33% of cases as compared to 67% originating from generic companies. In the same vein, in Ireland, Romania, the Netherlands, Finland, Hungary, the Czech Republic and Sweden, only 14 to 47% of cases were initiated by originator companies.

2.2.2.2. Number of Patent Litigations Initiated in the EU by Type of Action and Initiating Party

(477) Figure 65 provides an overview of the types of legal actions that were initiated by originator and generic companies.

Figure 65: Number of litigations initiated by originator and generic companies in the EU by type of action (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(478) As might reasonably be expected, infringement actions represented by far the majority of legal actions initiated by originator companies (96%) with other actions accounting for the remaining 4%.[249] The picture is more varied when it comes to generic companies, where actions for annulment accounted for 67%, followed by declaratory actions for non-infringement (19%) and by joint actions for annulment and a declaration of non-infringement (9%). Other actions initiated by generic companies accounted for the remaining 5 %.[250]

(479) Figure 66 illustrates the number of legal actions appearing under separate litigation reference numbers, which were reported as having been filed only by an originator company (without any subsequent counter-action by the defendant to appear under the same litigation reference number), only by a generic company or by both (initial action

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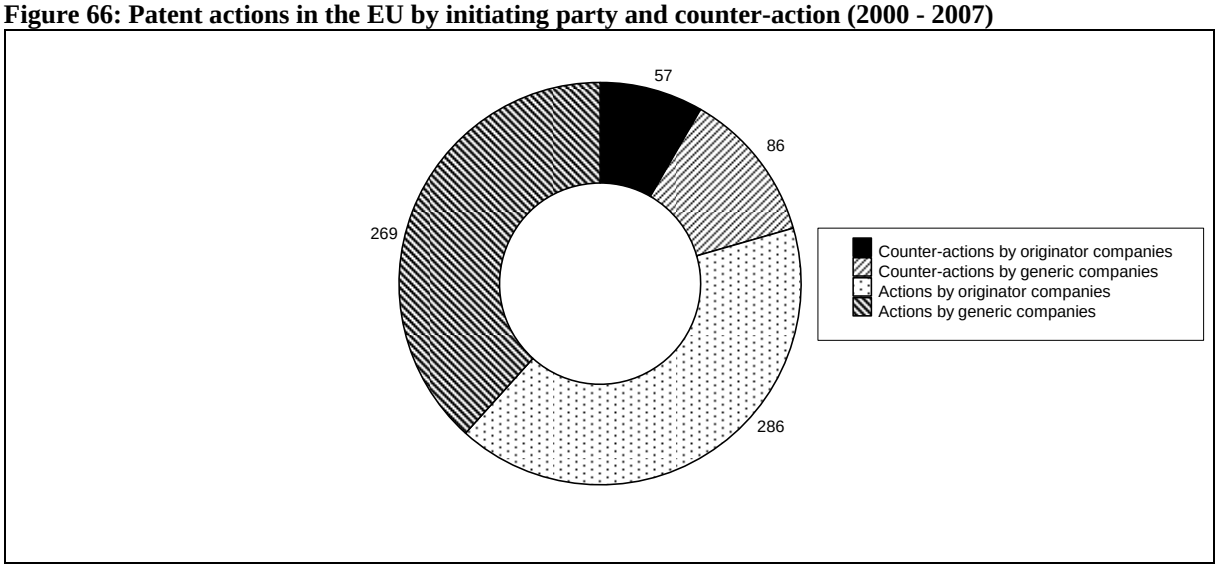
249 Respondent companies have indicated such other actions initiated by originator companies to cover, *inter alia*, actions for damages, etc.

250 Such other actions initiated by generic companies may be, amongst others, action for damages.

followed by a counter-action, both reported under the same litigation reference number).

Figure 66: Patent actions in the EU by initiating party and counter-action (2000 - 2007)



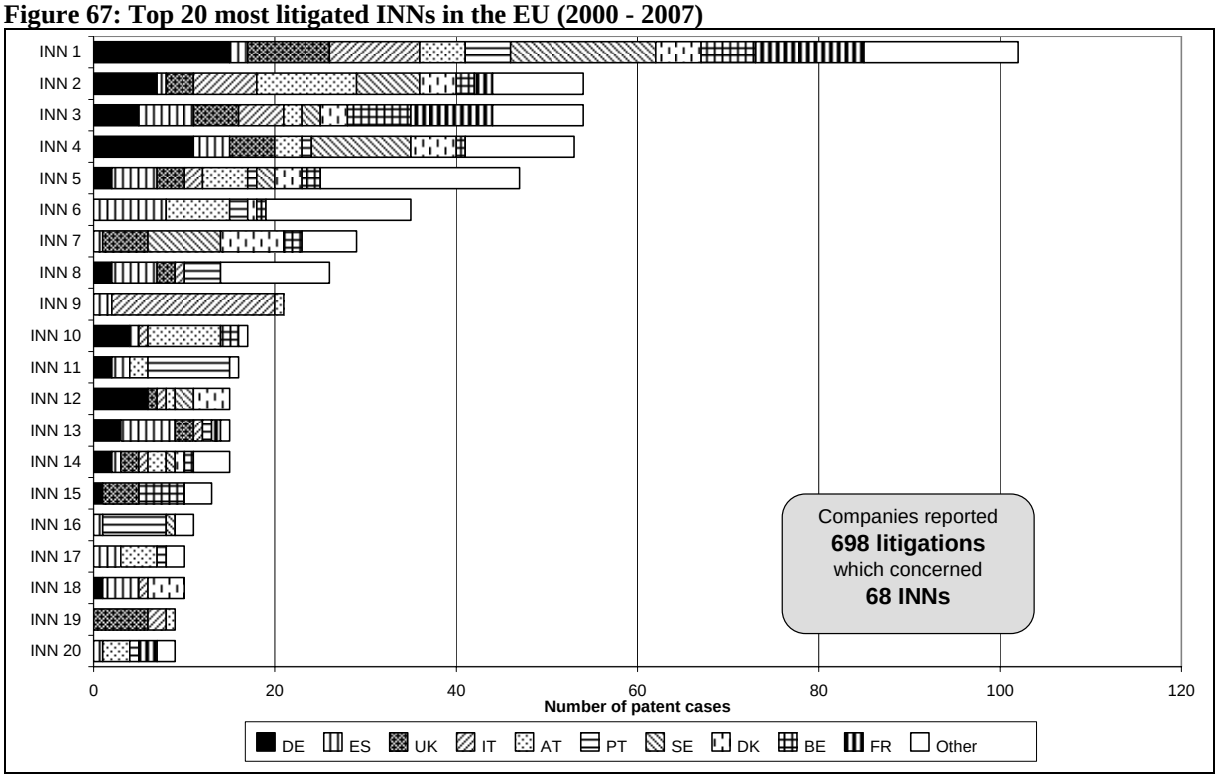
Source: Pharmaceutical Sector Inquiry

(480) Responses show that in 41% of all cases, a patent action was brought by an originator company without there being a counter-action filed by the generic company. In comparison, in nearly 39% of all reported litigations, the action initiated by a generic company was not followed by the launch of a counter-action by an originator company. In 12% of all cases, the patent action brought by an originator company was followed by the launch of a counter-action by a generic company. The cases where the action brought by a generic company was followed by a subsequent counter-action filed by an originator company represented 8% of the total.

2.2.2.3. INNs Concerned by Patent Litigation

(481) Figure 67 provides an overview of the 20 INNs which were most often the object of litigation in the EU, as presented by EU Member State.

Figure 67: Top 20 most litigated INNs in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(482) Litigation concerning the 20 most litigated INNs accounted for the vast majority of all patent litigation in the EU (80%). In addition, the top 20 INNs accounted for 29 % of all 68 INNs on which litigation was reported.

(483) The top six INNs were the object of nearly half (49%) of all reported litigations. By far the most litigated INN in the EU was INN 1 with 15% of all cases. The second to fifth most litigated INNs (INNs 2, 3, 4 and 5) were the focus of litigation in 7 to 8% of cases. The sixth most litigated INN (INN 6) was the object of litigation in 5% of cases. The remaining 14 INNs accounted for about 31% of all cases.

(484) The top three INNs in terms of intensiveness of litigation belong to INNs which were, on the major national markets during the period examined, both among the best-selling medicines (T50 list) and among the best-selling medicines which faced loss of exclusivity (E75 list).[251] Overall, all of the top 20 INNs belonged to at least one of the two aforementioned groups.

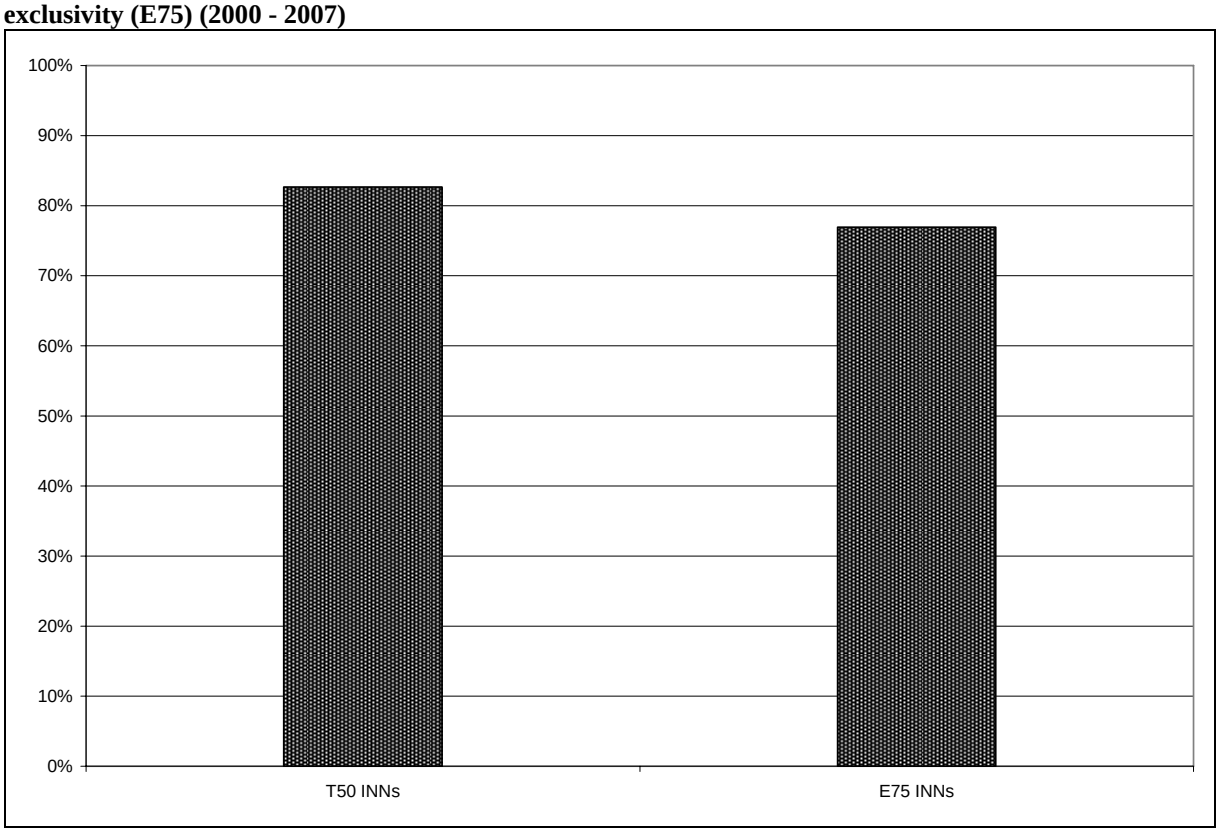
(485) All of the 20 most litigated INNs were the object of litigation in at least three Member States, whereas the top six INNs were litigated in at least five (and most often eight to

[251] For more information on the T50 and the E75 lists, please refer to the Annex: Methodology (Annexes to Chapter A).

nine) Member States.[252] The reasons for which litigation on any given INN is initiated in a specific Member State appear to be case-specific.

(486) Figure 68 illustrates the percentage of all patent litigation cases, reported by respondent companies, which concerned the best-selling INNs (T50 list) and/or the INNs which faced loss of exclusivity in the period 2000 to 2007 (E75 list).[253]

Figure 68: Litigation concerning the best-selling INNs (T50)and the best-selling INNs which faced loss of exclusivity (E75) (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(487) Figure 68 shows that the vast majority (83%) of all reported cases concerned best-selling INNs (T50). Furthermore, more than three quarters of all cases (77%) concerned best-selling INNs which faced loss of exclusivity in the period examined (E75). These findings confirm the relevance of the sample of 219 INNs.

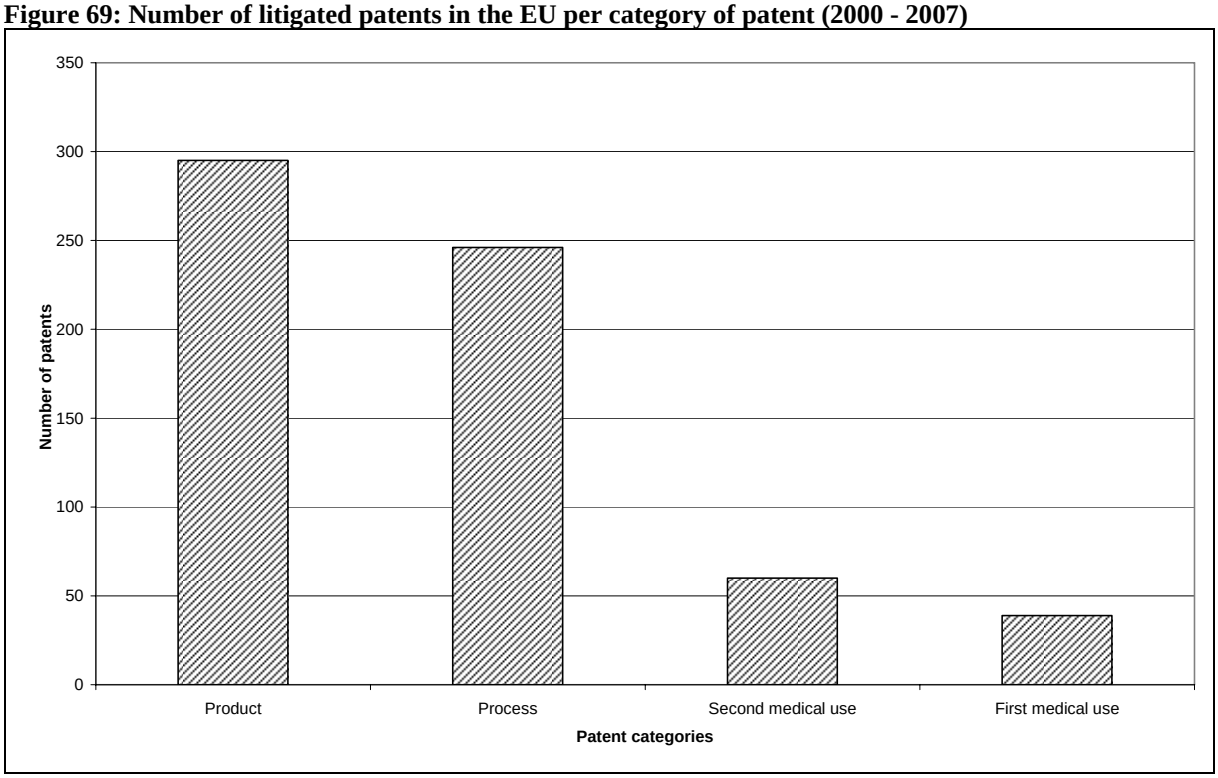
252 INN 1 was the subject of a substantial number of cases in Germany, Sweden, France, the United Kingdom and Italy (between 9% and 16% of all cases reported over INN 1 for each). An important number of cases concerning INN 2 were launched in Austria (20%), Germany, Italy and Sweden (13%). The highest number of litigations concerning INN 3 were examined by French and Belgian courts (17% and 13% respectively), followed by courts in Germany, Spain, Italy and the United Kingdom (9 to 11%).

253 For further details see footnote 251.

2.2.2.4. Categories and Types of Patents Concerned by Patent Litigation

(488) Figure 69 illustrates the number of patents per category of patent as litigated in courts across the EU in the period 2000 to 2007. Companies reported a total of 478 patents litigated across the EU for which patent categories were clearly specified.[254]

Figure 69: Number of litigated patents in the EU per category of patent (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(489) Responses show that a substantial number of litigated patents (62% or 295 out of 478 patents) fell into the category of product patents. Process patents were the second most litigated category of patents with 51% or 246 patents. In contrast, the percentage of litigated first and second medical use patents was substantially lower (8% (39) and 13% (60) of all patents, respectively).

(490) Figure 70 provides an overview of the types of patents (primary or secondary) which were most often the object of patent litigation.

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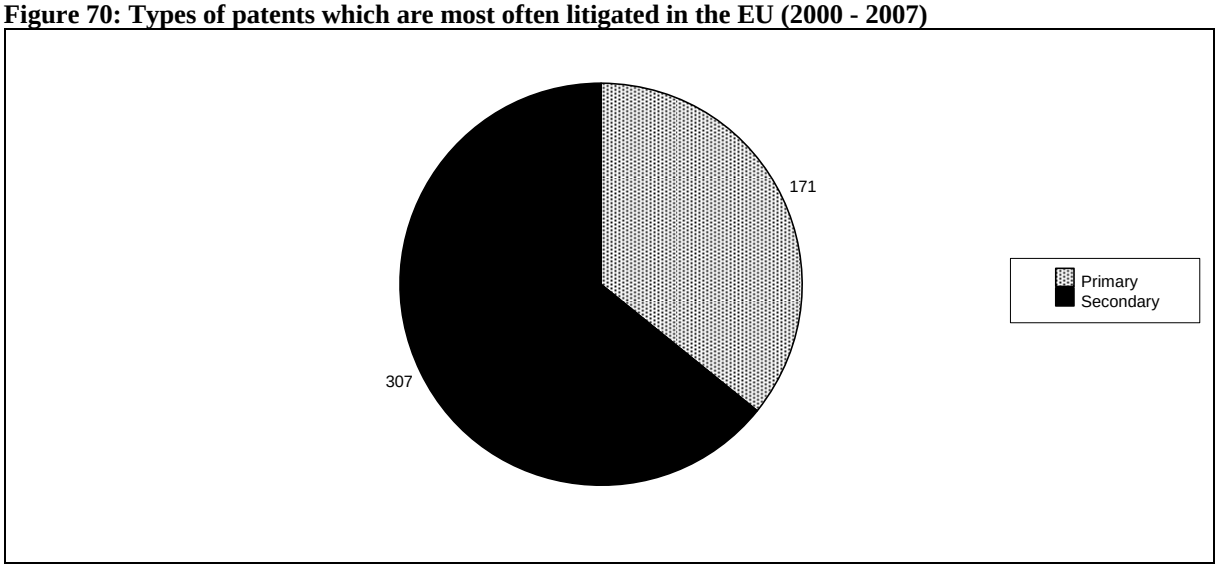
254 It should be noted that any given litigation may concern several patents. In addition, any given patent may fall under one or more different categories. Hence, due to multiple counting, the aggregate number of litigated patents across the four patent categories as listed in Figure 69 exceeds the total number of litigated patents reported by respondent companies (478). The number of patents falling in each of the four patent categories was calculated based on the national publication numbers, i.e. the instances of multiple occurrences of the same national patent were corrected to avoid double-counting. However, one patent may fall under more than one patent category, e.g. a patent that covers product and process claims will belong to both the product and the process category. In such cases, patents were allocated in their entirety to each of the relevant categories, i.e. the patent evoked in the above example would be added as one unit to the product bar and as one unit to the process bar.

Figure 70: Types of patents which are most often litigated in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(491) Figure 70 shows that secondary patents accounted for nearly two thirds of all litigated patents (64%). Primary patents made up the remaining 36%.

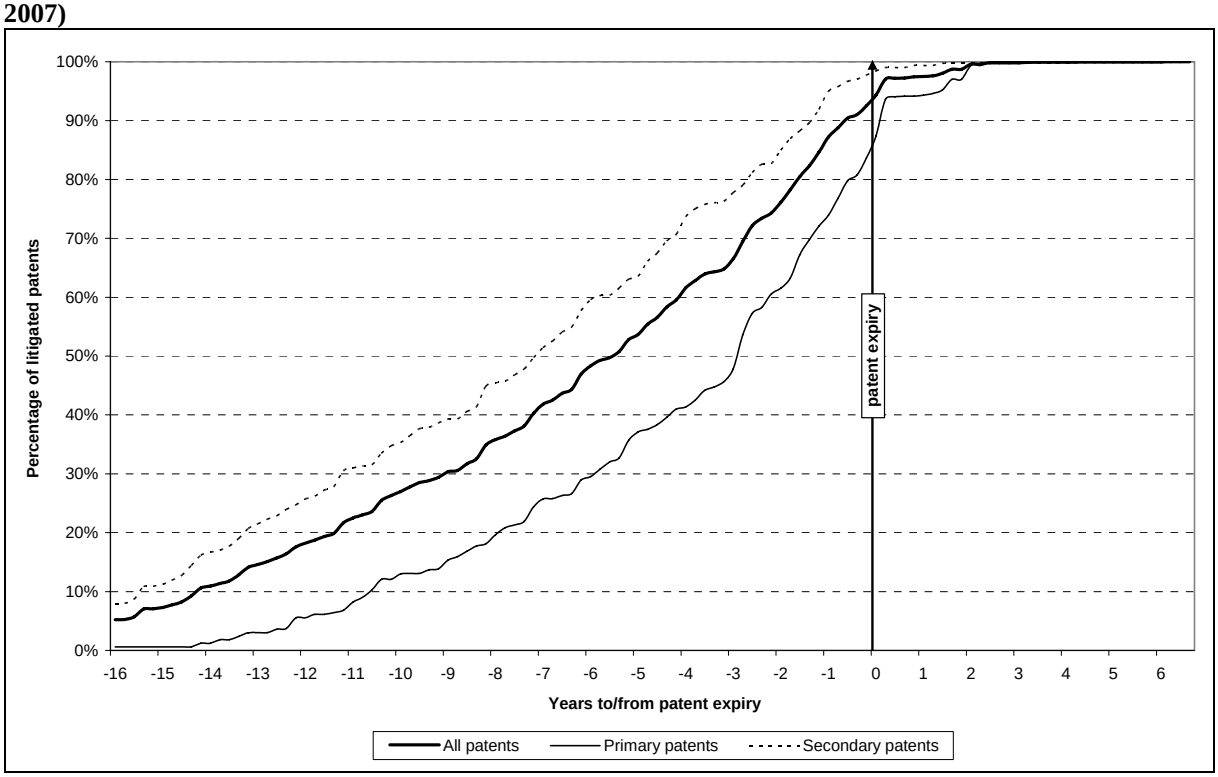
(492) Results of the sector inquiry also show that originator companies initiated a higher number of cases concerning primary and secondary patents than generic companies (54% versus 46%).

(493) In contrast to the data reported on disputes, which show that primary patents were the most frequent object of disputes in the EU (see Figure 59), responses indicate that it was secondary patents which were most often the object of litigation across the EU.

2.2.2.5. Patent Expiry Dates and the Start of Patent Litigation

(494) Figure 71 illustrates the relationship between the length of time until patent expiry and the date of initiation of litigation, distinguishing between primary, secondary and all patents in general. The vertical axis indicates the (cumulative) percentage of patents being the object of litigation as reported by respondent companies. The horizontal axis lists a given number of years before (16 years) and after (6 years) patent expiry. Each point in the curve relates to a single patent that was the object of litigation proceedings in the period 2000 to 2007. By way of illustration: 10% of primary patents concerned by litigation in that period had still 10.5 years or more to go until expiry. For secondary patents, the corresponding figure is 15.5 years.

Figure 71: Relationship between patent expiry dates and the start of patent litigation in the EU (2000 – 2007)



Source: Pharmaceutical Sector Inquiry

(495) The data provided show that patent litigation may begin shortly after grant. The cumulative number of litigated patents gradually increases as patent expiry approaches. This is true for all patents and the increasing dynamic of this process can be illustrated by the increasingly steep gradient of the curve as the patent expiry date approaches.

(496) However, the distribution of patent litigations over time reveals substantial differences between primary and secondary patents. The secondary patents curve is less convex than that of primary patents, which means that secondary patents are (a) more equally distributed over the relative period displayed in Figure 71 and (b) more likely to be litigated earlier in the process. As a consequence, the time before patent expiry is relatively longer. For primary patents the opposite is true.

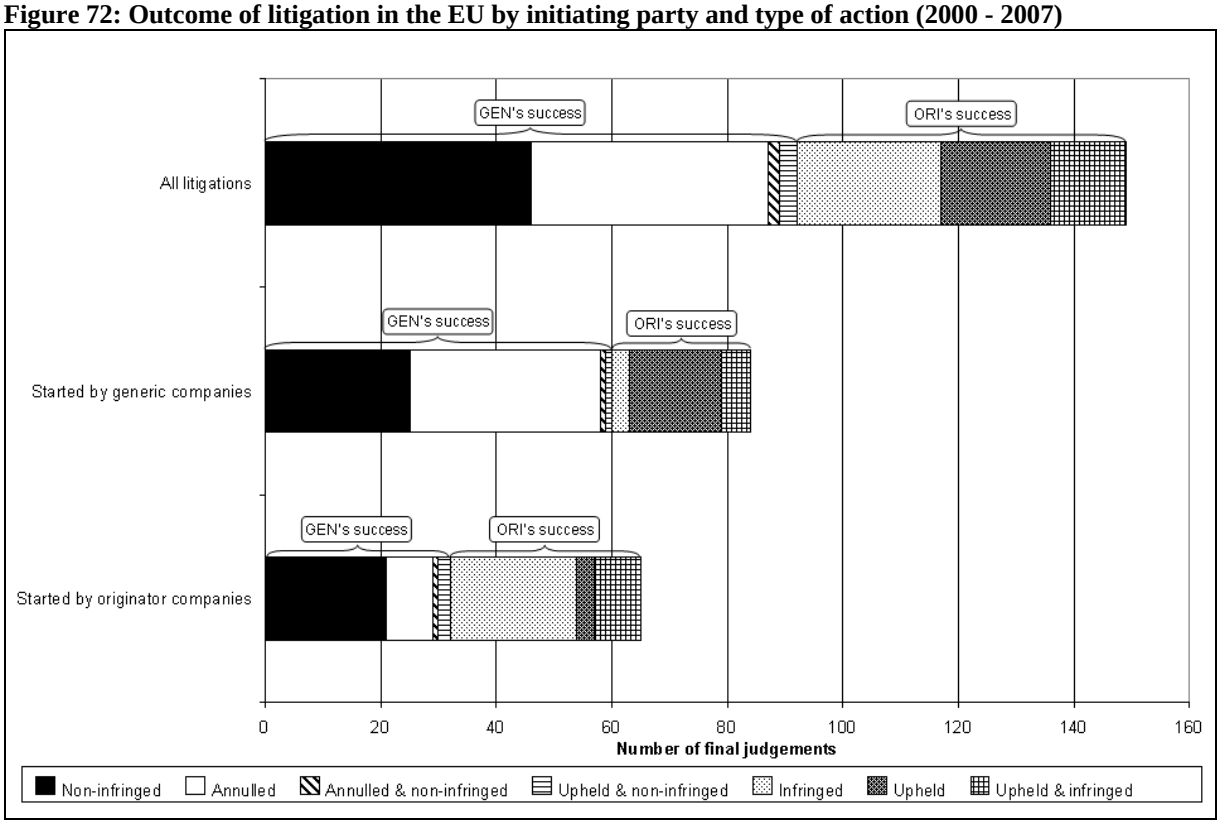
(497) For example, when the patents covered are those having ten years or more before expiry, the analysis shows that 13% of primary patents were the object of court proceedings versus 36% of secondary patents. Likewise, five years or more prior to patent expiry, 37% of primary patents and as much as 66% of secondary patents had already been litigated in court. Once the patents covered by the analysis include those having one or more years before expiry, the relative difference between primary and secondary patents narrows down with 77% of primary patents being the object of litigation versus 96% of secondary patents.

(498) At the date of patent expiry (year 0 in Figure 71), the difference between the two types of patents decreased considerably and was down to less than 6 percentage points. A limited number of cases relate to the situation where the date, on which litigation was initiated, falls after the patent expiry date. Those cases were specifically introduced by one of the litigating parties in order to seek damages (for example).

2.2.2.6. Outcome of the Main Action on the Merits

(499) Companies were asked to report on the outcome of patent litigation in all final judgements (*res iudicata*) in the period examined by indicating one of the following outcomes with regard to the litigated patent: (i) non-infringed; (ii) annulled; (iii) infringed; (iv) upheld and (v) other.[255] Figure 72 illustrates the final outcomes of all litigation reported and the final outcomes of litigation per initiating party (with the exception of final outcomes indicated as "other", where results could not be classified).[256]

Figure 72: Outcome of litigation in the EU by initiating party and type of action (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(500) As explained above, respondent companies reported 698 separate litigations. A final judgment was reported in 149 of the litigations, of which 84 were initiated by a generic company and 65 by an originator company. The remaining 549 cases were reported as being either pending or settled (court proceedings withdrawn), or no final outcome was indicated.

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255 The outcome involving the annulment of the patent and a declaration of non-infringement (which may be the result of litigation concerning two different patents or one patent covering several claims, some being annulled and the other declared non-infringed by the court) was subsequently added as some data reported by companies indicated such final outcome of litigation.

256 Such "other" final outcomes of litigation reported by respondent companies referred to, *inter alia*, settlement agreements.

(501) For the purposes of Figure 72, litigation outcomes were divided into two groups labelled "GEN's success" and "ORI's success" according to their likely market consequences allowing or forbidding market entry by a generic company. An outcome is considered a success, from the perspective of an originator company, if the final judgement does not allow generic entry prior to patent expiry. On the other hand, an outcome is considered successful for the generic competitor if the final judgement allows risk-free generic entry.

(502) Overall results show that generic companies won the majority of all patent litigations reported in which a final judgment was delivered (62%) whereas originator companies were successful in considerably fewer cases (38%).[257]

(503) More specifically, generic companies won nearly three quarters of all patent cases they initiated (71%) and were unsuccessful in over one quarter of the cases they initiated (29%).[258]

(504) In comparison, originator companies were successful in slightly over half of the cases they initiated (51%) whilst they lost nearly half (49%).[259]

(505) As Figure 72 shows, generic companies won overall more than 60% of all patent litigations initiated in the EU from 2000 – 2007 in which a final judgment was given. However, this outcome was achieved at the expense of the multiplication of costly and often lengthy litigation before different national jurisdictions, thus entailing a significant burden and legal uncertainty for generic companies. In light of the above, the introduction of a Community patent, which could be challenged and enforced before a unified Community patent court, would significantly increase the legal certainty and efficiency of the European patent system.

(506) Figure 73 illustrates companies' responses as to the outcome of litigation in all final judgements by type of action and type of patent (primary or secondary) given from 2000 to 2007.[260]

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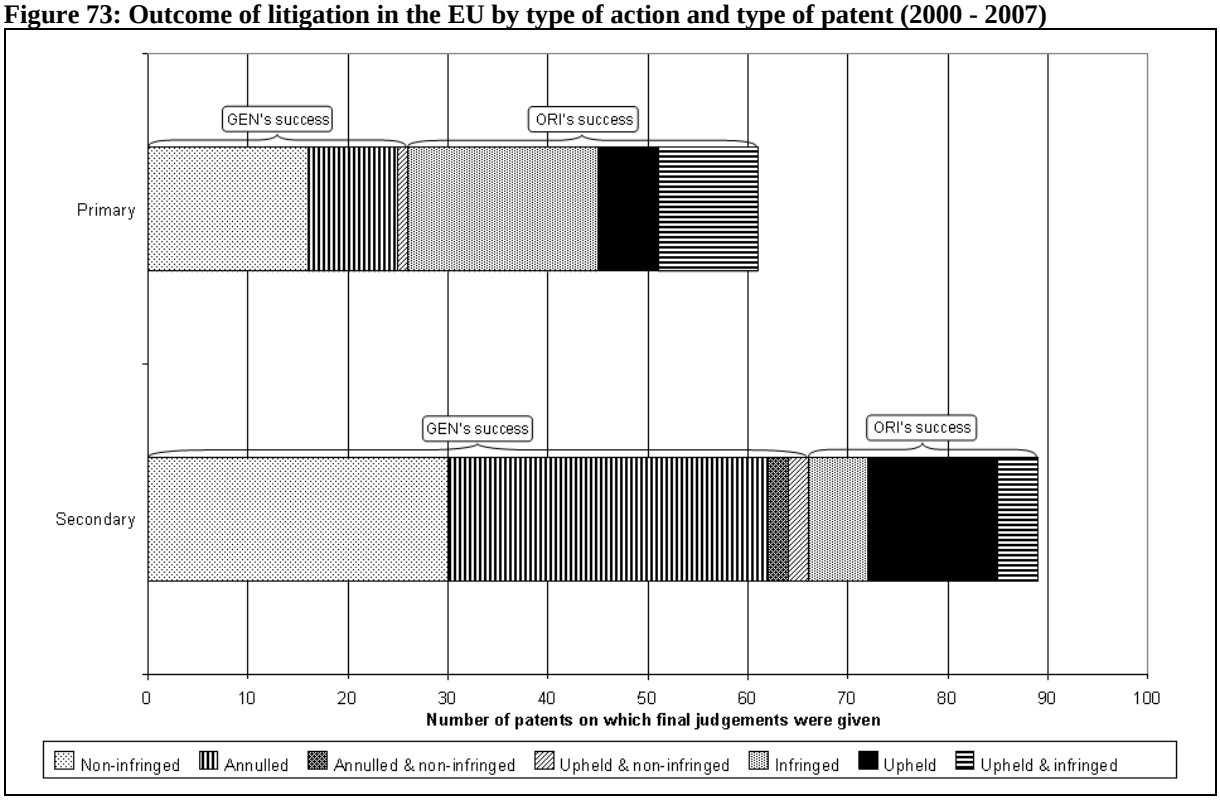
257 More precisely, the patent was annulled and declared non-infringed in 27.5% and 30.9% of all cases, respectively. The patent was upheld and declared not to be infringed in 2% of cases, and annulled and declared non-infringed in another 1.3%. In comparison, the patent was upheld and was declared infringed in 13% and 17% of all litigations, respecitively. The court upheld the patent and found it infringed in another 8%.

258 Courts annulled the patent and declared it not to be infringed in 39% and 30% of all litigations initiated by generic companies, respectively. The patent was upheld but found not to be infringed in nearly 1% of litigations, and annulled and declared non-infringed in another 1%. In comparison, the patent was upheld and declared infringed in 19% and nearly 4% of all cases, respectively. Court upheld the patent and declared it infringed in another 6% of cases.

259 Courts found a patent infringement and upheld the patent in over one third (34%) and 5% of all litigations initiated by originator companies, respectively. The patent was upheld and declared infringed in 12% of litigations. In comparison, in nearly one third of litigations (32%) initiated by the originator party the courts found the patent not to be infringed, and annulled in 12% of cases. The patent was upheld but found not to be infringed in 3% of cases, and was annulled and declared not to be infringed in another 1.5%.

Figure 73: Outcome of litigation in the EU by type of action and type of patent (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(507) As shown in Figure 73, originator companies won 57% of all cases concerning primary patents in which a final judgement was given, versus 43% for generic companies.[261]

(508) The picture is different for secondary patents. Generic companies won nearly three quarters (74%) of all cases concerning secondary patents in which a final judgement was given.[262] In contrast, originator companies were successful in over one quarter of litigations over secondary patents (26%). It should be recalled that secondary patents

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260 Figure 73 and Figure 74, contrary to Figure 72, are not based on a number of final judgements, but on a number of patents on which final judgements were given. The difference between the two methods relates to the situation in which a final judgement concerns more than one patent.

For more information on the patent and litigation strategies employed by originator companies see Chapter C.2.1

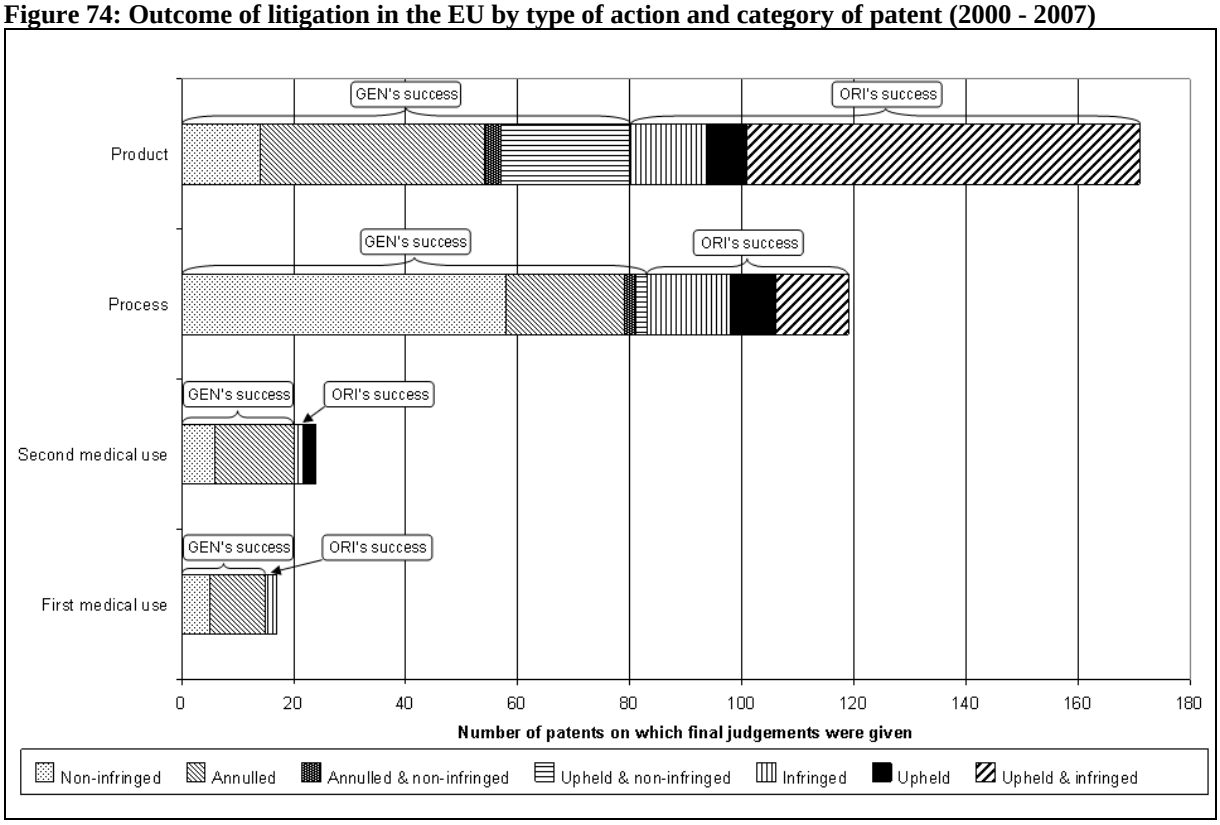
261 In particular, courts upheld the primary patent in 10% of all cases concerning primary patents, and upheld and declared the patent infringed in another 16%. The primary patent was declared infringed in 31% of cases. In comparison, the primary patent was found not to be infringed in 26% of cases concerning primary patents. It was annulled in 15% of cases and upheld but found not to be infringed in another 1.5%.

262 Secondary patents were annulled in over one third of all cases concerning secondary patents (36%) and were found not to be infringed in nearly 34% of cases. They were upheld but declared non-infringed, and annulled and found not to be infringed in 2% and 2% of cases. In contrast, secondary patents were upheld and declared infringed in 15 and 7% of cases, respectively.

accounted for nearly two thirds (64%) of all litigated patents in the EU in the period 2000 – 2007 (see Figure 70).

(509) Figure 74 provides an overview of the outcome of litigation in all final judgements rendered in the period 2000 to 2007 shown by patent category.[263]

Figure 74: Outcome of litigation in the EU by type of action and category of patent (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(510) Responses show that, by and large, product patents were most often the object of litigation. Originator companies won a slight majority of cases with over 53% of final rulings, concerning product patents, being decided in their favour as against 47% for generic companies.[264]

(511) Process patents formed the second most litigated category of patents. More than two-thirds (nearly 70%) of all final judgments handed down on process patents were

263 It should be noted that a given litigation may concern one or several patents falling under one or more patent categories and, therefore, overlaps may occur in the number of cases ending with a final judgement presented on the figure above. For example, one final judgement may annul a patent which is classified as both process and product patent.

264 More precisely, courts upheld the product patent and declared it infringed in 41% of all cases over product patents, found the patent infringed in 8% of cases and upheld it in 4%. In comparison, the product patent was annulled and/or declared non-infringed in 33% of all cases.

favourable to the generic litigant, with only 30% of final judgments being favourable to originator companies.[265]

(512) Generic companies were particularly successful in winning the vast majority of cases concerning second medical use patents (83%) with originator companies winning a merely 17% of cases.[266]

(513) Finally, generic companies were equally successful in challenging first medical use patents, with final judgments in their favour being given in the overwhelming majority of litigations (88% of all cases) compared to only 12% in favour of the originator party.[267]

(514) Hence, with the exception of product patents where originator companies were about as successful in litigation, generic companies won the overwhelming majority of cases concerning the other three categories of patents. Hence, it would appear that the strength of process patents, first medical use and second medical use patents is relatively more limited and their challenge before court more often yields favourable results for generic companies.[268]

(515) Figure 75 provides an overview of the average duration of litigation, in which a final judgement was given in the period 2000 to 2007, in a sample of 16 Member States, and lists the number of litigations per Member State.[269]

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265 The process patent was found not to be infringed in 49% of cases, and was upheld but declared non-infringed in another 2%. It was annulled in nearly 18% of cases. In contrast, the process patent was upheld, found infringed and upheld and found infringed in nearly 7%, 13% and 11% of all cases concerning process patents, respectively.

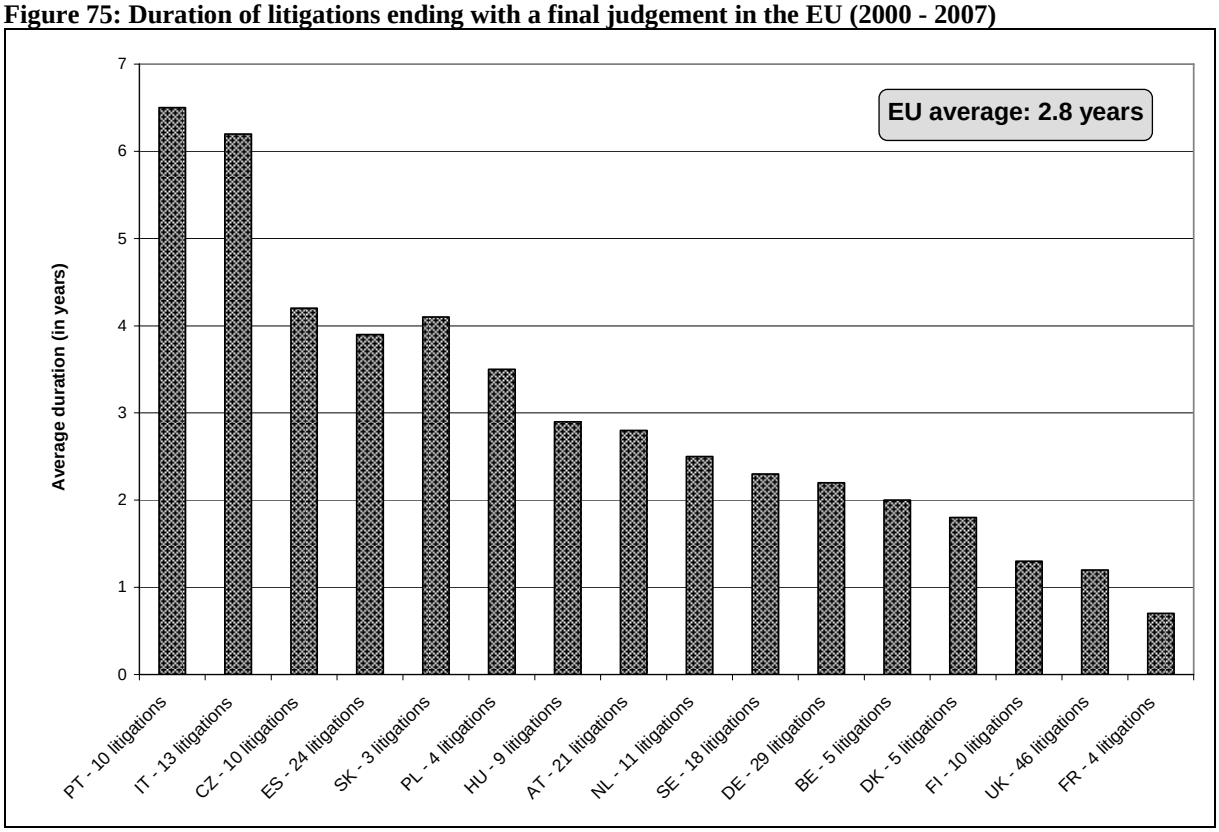
266 Second medical use patents were annulled in 58% of all cases concerning second medical use patents and declared non-infringed in another 25%. In comparison, they were upheld and found infringed each in 8.3% of cases.

267 First medical use patents were annulled and declared non-infringed in 59% and 29% of all cases, respectively. In comparison, first medical use patents were declared infringed in only 12% of cases.

268 For further information on originator companies' patent and litigation strategies see Chapter C.2.1.

269 It should be noted that litigation scenarios may vary with some cases involving one, and other two or three court instances and a varying degree of complexity of the subject matter.

Figure 75: Duration of litigations ending with a final judgement in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

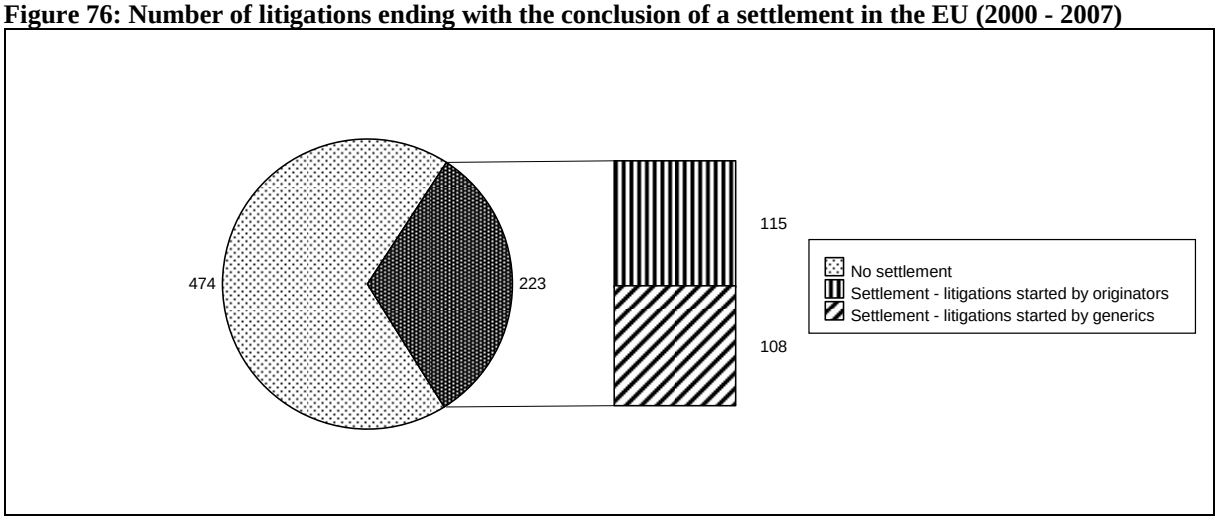
(516) Patent litigation in the EU took on average 2.8 years in the period examined. Figure 75 shows litigation before Portuguese and Italian courts was the lengthiest with an average duration of over six years. In the Czech Republic, the Slovak Republic, Spain, and Poland, litigation took on average between three and four years whilst in Hungary, Austria, the Netherlands, Sweden, Germany and Belgium, litigation had an average duration of two to three years.

(517) Patent litigation in Denmark, Finland and the United Kingdom took a significantly shorter time with an average duration of one to two years. Lastly, French courts were the most expeditious in examining patent litigation taking on average of less than a year (seven months) to pronounce a final judgement in the cases examined.

(518) Patent litigation in various Member States, following different procedural rules and with varying length of proceedings, enhances legal uncertainty for generic companies and the risk of divergent outcomes regarding the issue of the validity or the infringement of a given patent. In particular, litigation in some large EU Member States (such as Italy, Spain and Poland) significantly exceeded the EU average length of litigation of 2.8 years. The introduction of a single Community patent and a unified patent judiciary would significantly increase the efficiency of the European patent system by reducing legal uncertainly, litigation costs and resources used as well as shortening the delays incurred.

(519) Companies were asked to provide information on whether the patent litigation they initiated resulted in the conclusion of a settlement (see Figure 76 below).[270] Responses show that a settlement was the outcome of patent litigation in nearly a third of all reported litigations (32%).[271] Furthermore, out of all litigations which resulted in a settlement, 52% were initiated by an originator company and 48% by a generic company.

Figure 76: Number of litigations ending with the conclusion of a settlement in the EU (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

2.2.2.7. Interim Injunctions

(520) An important remedy for originator companies is the possibility of provisionally restraining the generic company from selling the infringing generic product until the court decides on the merits of the case. Interim injunctions can be granted in order either to prevent an impending generic entry to the market or to provisionally forbid the marketing of a generic product which is already on the market. For interim relief to be granted, generally the originator company has to establish urgency, the risk of (irreparable) harm and minimum grounds for its main claim.[272]

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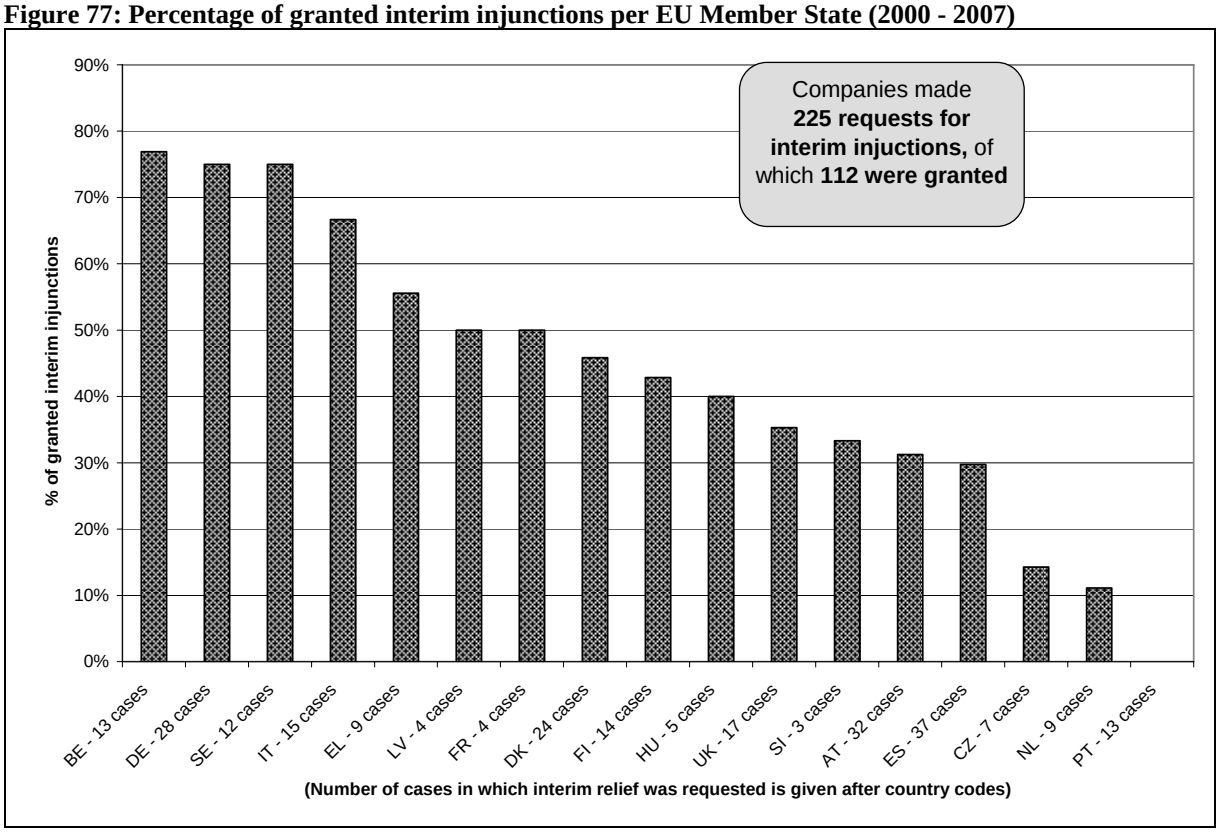
270 For further information on settlement agreements between originator and generic companies see Chapter C.2.4.

271 The aggregate number of settlements reported in the present section on patent-related exchanges and litigation between originator and generic companies (223 settlements resulting from litigation and 35 resulting from disputes) exceeds the total number of settlements as reported in the section on patent settlements (see Chapter C.2.4). This is explained by the different way in which settlement agreements were counted in the two sections. For the purpose of the present section, one settlement was counted in the case of each litigation ending with a settlement whilst in the context of the section on settlements (see Chapter C 2.4), many settlement agreements covered several litigations in several Member States. Hence, the figures provided in the two sections as such are not comparable.

272 Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights (OJ L 157, 30.4.2004, pp.45-86, the "Enforcement Directive") harmonised Member States' legislation regarding the means of enforcing intellectual property rights. For more information see Chapter B.2.1.

(521) Figure 77 provides an overview of the percentage of patent litigations in which interim injunctions were granted out of all litigations in which a request for interim relief was made, shown per EU Member State. Companies reported 255 requests for interim injunctions made by originator companies from 2000 - 2007, of which 112 (44%) were granted.

Figure 77: Percentage of granted interim injunctions per EU Member State (2000 - 2007)



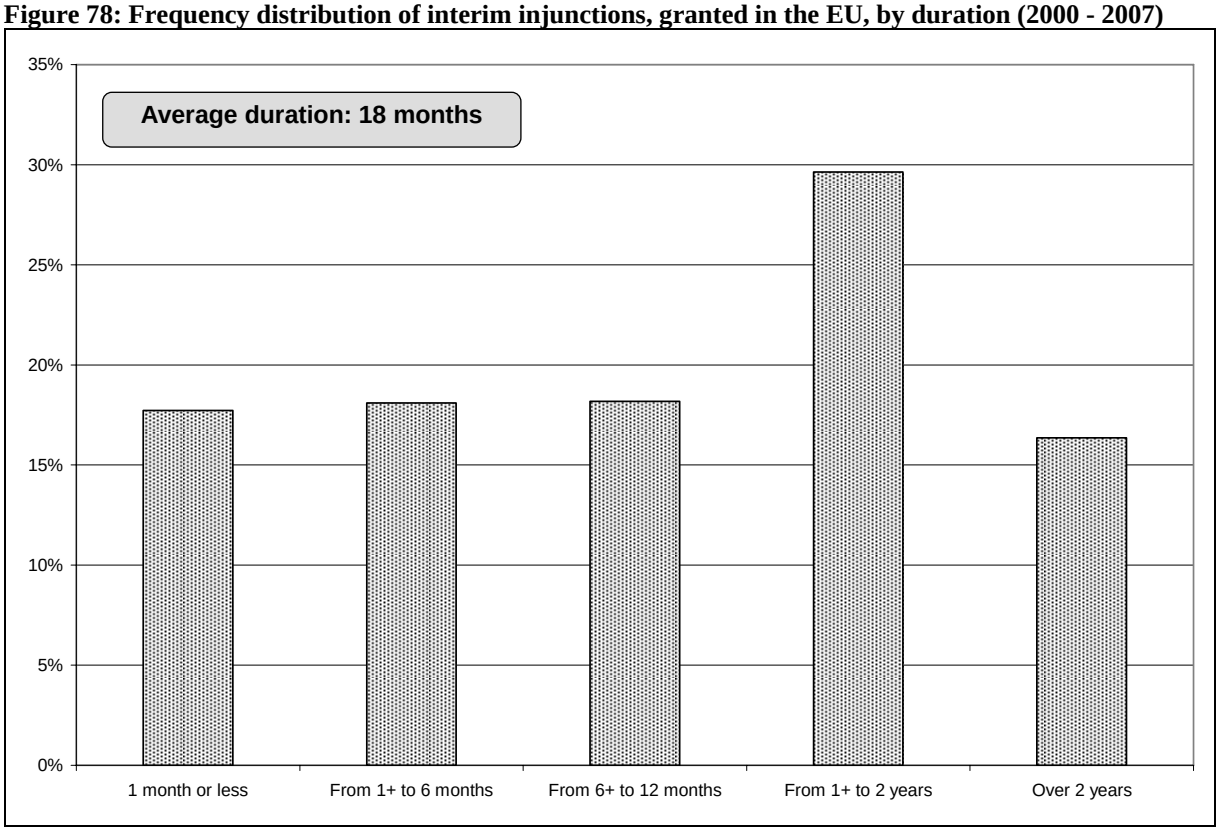
Source: Pharmaceutical Sector Inquiry

(522) Courts granted interim injunctions most frequently in Belgium, Germany and Sweden where injunctions were granted in three quarters of all cases in which interim relief was requested (75 – 77% of cases) and in two thirds in Italy (67%). Interim injunctions were granted in (over) half of all cases in Greece, Latvia and France. Courts in Denmark, Finland and Hungary granted interim relief in less than half of all cases (40 to 46%) whereas in the United Kingdom, Slovenia, Austria and Spain interim relief was granted in only one third of all cases (30 to 35%). Courts in the Netherlands, the Czech Republic and Portugal were the least inclined to grant interim injunctions with interim relief agreed in 14%, 11% and none, respectively, of all cases in which it was requested.

(523) The lack of a single Community patent and a unified patent judiciary result in a substantial burden for originator companies which need to file requests for interim injunctions in all the Member States where their patent rights are (about to be) infringed, without having any certainty as to the outcome of the request. Thus, it can happen that in a request for interim relief in the context of an (impending) infringement of the same INN, one national court may grant injunctions and another may not.

(524) Figure 78 provides an overview of the frequency distribution of interim injunctions granted by Member State courts from 2000 to 2007 in light of their duration.[273] The data have been used as reported by companies on interim injunctions granted in the framework of an initiated main action. Respondent companies were asked to provide the total period during which interim injunctions were granted by accumulating the duration of all interim injunctions granted in the course of a given patent case.

Figure 78: Frequency distribution of interim injunctions, granted in the EU, by duration (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

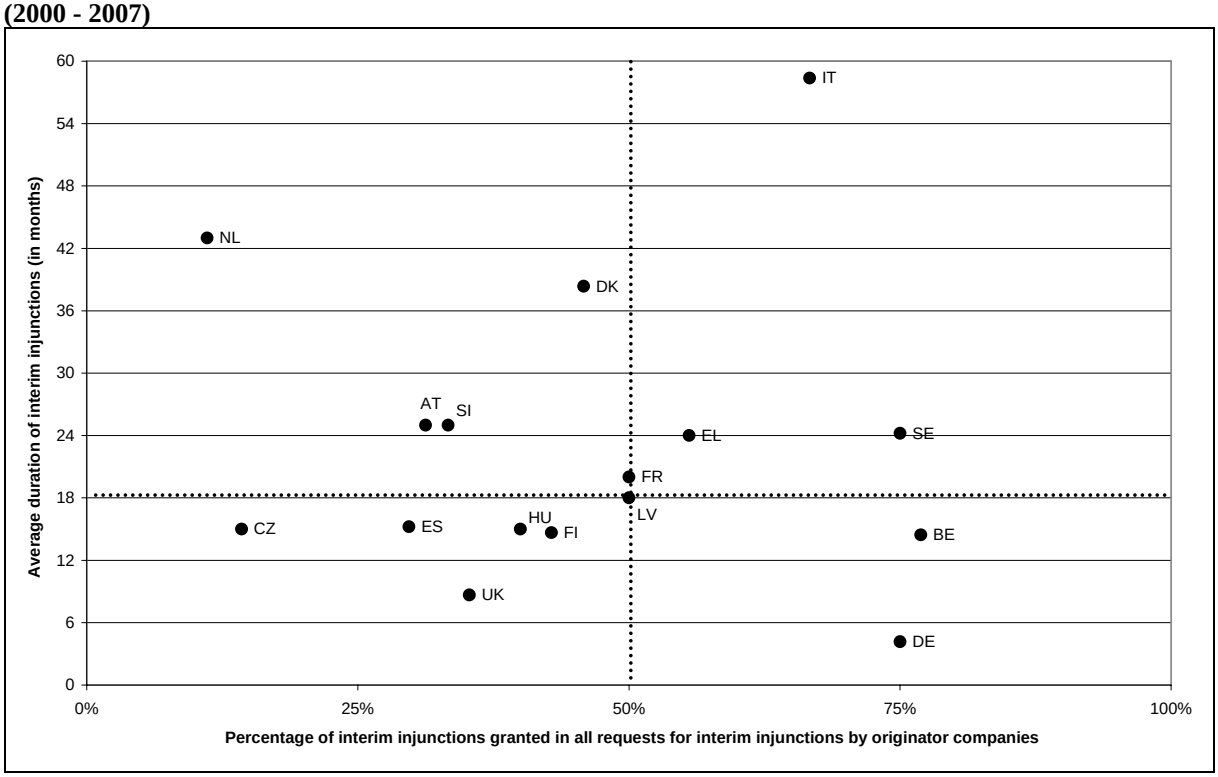
(525) Data reported by companies show that interim injunctions were granted, on average, for a period of 18 months. A significant proportion of interim injunctions (46%) were granted for a period exceeding one year. More precisely, 30% of interim injunctions were granted for a period lasting between one and two years, and 16% were granted for a period exceeding two years.

(526) However, more than half of all interim injunctions granted in patent litigation in the EU (54%) did not exceed one year. Thus, 18% of interim injunctions were granted for a period of six to 12 months, another 18% for a period of one to six months, and nearly 18% were granted for a period not exceeding one month.

[273] For the purpose of the present chapter, only requests for interim injunctions made in the framework of a main patent-related legal action have been taken into account.

(527) Figure 79 shows the proportion of patent litigations in which interim injunctions were granted by EU Member State and the average duration in months of the interim injunctions reported.

Figure 79: Percentage of interim injunctions granted and their average duration per EU Member State (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

(528) Figure 79 divides Member States into four different groups according to (a) the average duration of interim injunctions, where a division was made between the Member States in which the interim injunctions were granted, on average, for less and for more than 18 months (which is the EU average), and (b) the proportion of litigations in which interim injunctions were granted, where a division was made between Member States having more or less than 50% of litigations in which interim injunctions were granted out of all litigations in which interim relief was requested.

(529) These divisions create four rectangular boxes (see the dotted lines in Figure 79) of which the lower left and the upper left rectangles are the most populated. The countries situated in the lower left rectangle are characterised by the relatively shorter duration of the interim injunctions granted (less than 18 months) and the lower percentage of litigations in which interim injunctions were granted (less than 50% of litigations: the rectangle includes the Czech Republic, the United Kingdom, Hungary, Finland and Spain). In the countries situated in the upper left rectangle, interim injunctions had a relatively longer average duration (more than 18 months) and were likewise granted in less than half of litigations (the Netherlands, Austria, Slovenia, and Denmark).

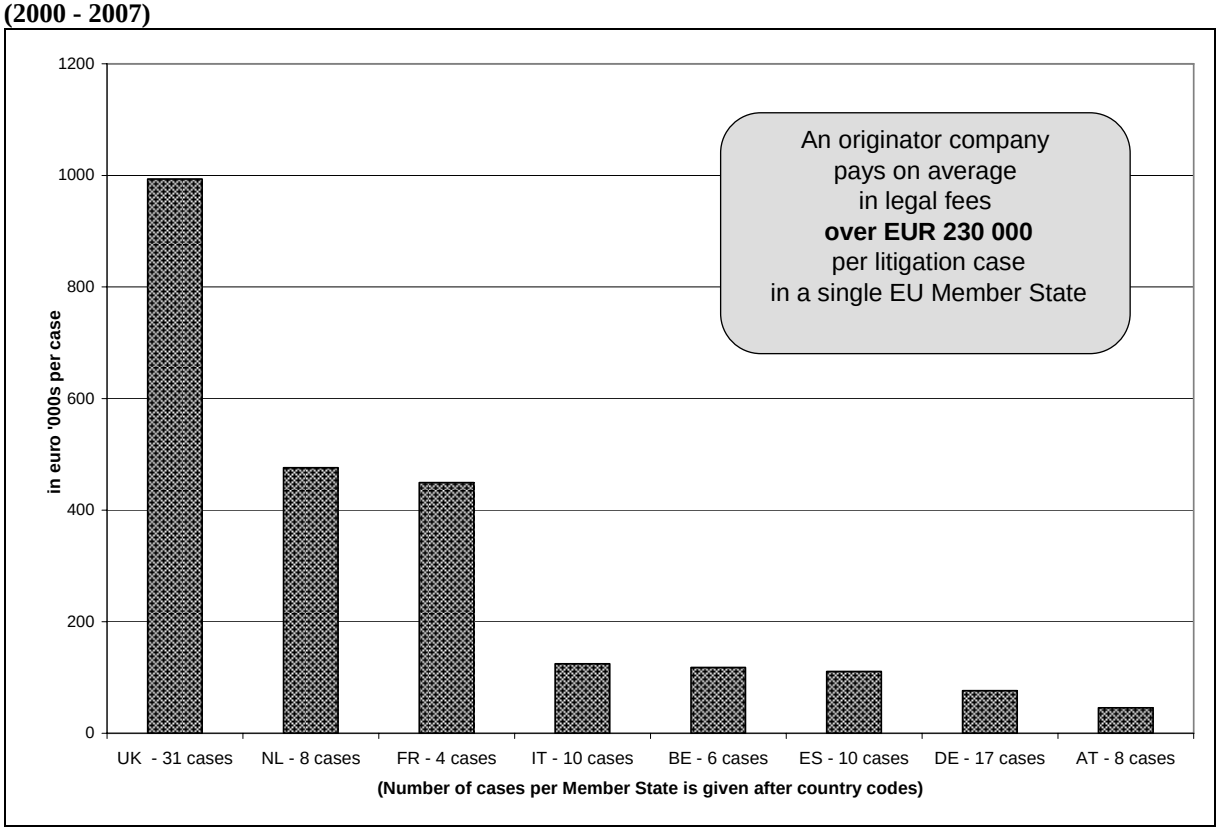
(530) In the lower right rectangle, which includes Belgium and Germany, interim injunctions were equally granted for an average duration of less than 18 months but the proportion of cases involving interim injunctions was relatively higher (more than 50% of cases). In the upper right rectangle, which includes Greece, Sweden and Italy, interim injunctions were granted for a higher average duration (more than 18 months) and in a

higher proportion of cases (more than 50%). In Latvia and France,[274] interim injunctions were granted in 50% of all cases for an average duration of 18 and 20 months respectively.

2.2.2.8. Cost of Fees for Legal Advice Incurred in Patent Litigation

(531) Companies were asked to report the total costs incurred for each litigation to which they were a party, including a break-down of lawyers' fees, man-hours used and other costs. The average legal fees [275] incurred by originator companies per litigation and per EU Member State are examined below (see Figure 80) by reason of their importance for the total cost of patent litigation. For the purpose of graphic presentation, the sample covers some of the largest Member States of the EU, on which more substantial amount of data was provided.

Figure 80: Average legal fees per litigation and per Member State as reported by originator companies (2000 - 2007)



Source: Pharmaceutical Sector Inquiry

274 The discrepancy between the data on the length of patent litigation in France and the duration of interim injunctions can be explained as follows. The data reported on interim injunctions granted in France concerned mostly ongoing patent cases for which no duration could be provided yet, whilst the data on the length of litigation in France relied on the limited number of cases ending with a final judgment which had been reported by respondent companies.

275 For the purpose of the report, legal fees can be defined as the fees charged for advice by external lawyers in patent proceedings.

(532) Responses show that originator companies paid, on average, € 230,000 in legal fees per case in a single Member State. Responses also show that legal fees incurred in patent litigation before UK courts were particularly high, with an average of € 993,000 per litigation. The second highest average legal fees (which were roughly half of those in the United Kingdom) were incurred in patent litigation in the Netherlands and France (an average of € 476,000 and € 449,000 per litigation). In Italy, Belgium and Spain, legal fees in patent cases ranged between € 111,000 and € 124,000 on average. Finally, it was apparent that, on average, legal fees were lowest in Germany and Austria (€ 76,000 and € 46,000).[276]

(533) As to the total cost of pursuing patent litigation in the EU in the period 2000 to 2007, data reported by respondent companies show that, on a rough estimate, the total cost exceeded € 420 million.[277]

(534) As evidenced by companies' replies, legal fees incurred in multiple patent litigations in various EU Member States are very substantial. In addition to the high legal fees, litigation costs generally also include court fees, cost of experts, costs related to technical investigations and possibly appeal procedures, and translation costs required by litigation before different jurisdictions. Therefore, the cost of patent litigation in the EU could be substantially lower if the European patent system relied on a Community-wide patent, which could be challenged and enforced before a unified patent judiciary.

2.2.2.9. Contradicting Decisions

(535) The data collected during the sector inquiry also allowed to analyse whether national courts reached contradicting decisions on the same underlying issues in patent litigations.[278] Such contradicting decisions are possible if a court in one Member State decides that the contested patent is valid, whilst a court in another Member State declares it invalid, or if a court in one Member State declares that the product launch of a generic version would infringe the patent rights of the originator company, whilst a court in another Member State finds that the patent would not be infringed by such action.

(536) Such contradicting rulings were found in a total of 16 cases out of the 149 final judgements reported in Figure 75, i.e. 11% of all cases. This is a significant finding

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276 It should be noted that litigation scenarios may differ with some cases involving several instances and a varying degree of complexity of the subject matter.

277 The total cost of litigation consists of legal fees, costs of own labour (i.e. man-hours spent by the company's employees on a given case) and other costs. The estimation is based on the figures made available in the framework of the sector inquiry and extrapolated for those litigation cases for which the requested information was not provided by respondent companies. Furthermore, the estimation takes into account the likely costs incurred by the counter-party to litigation.

278 It should be noted that – legally speaking – the court cases pending in different Member States (do) deal with the same subject matter as the geographic scope of the underlying patents is not identical.

since the existence of conflicting final judgements inevitably harms the legal certainty for the companies that are active in a given product on other EU markets.

Summary

Between 2000 and 2007, originator and generic companies engaged, out of court, in at least 1,300 patent-related contacts and disputes concerning the launch of generic products. The vast majority of disputes was initiated by the originator companies, which most often invoked their primary patents, e.g. in warning letters.

The number of patent litigation cases between originator and generic companies increased by a factor of four between 2000 and 2007. In total, close to 700 cases of patent litigation between originator companies and generic companies were reported in relation to the medicines investigated. Out of these, 149 cases were reported as litigation in which a final judgment was reached by the court. The duration of patent litigation varied considerably between Member States with an average duration of 2.8 years.

The majority of court cases were initiated by originator companies. However, generic companies won the majority of cases in which a final judgment was given (62%). Unlike during the dispute phase, originator companies primarily invoked secondary patents during litigation.

Litigation was often initiated in many different Member States across the EU with respect to the same medicine. In 11% of the final judgments reported, two or more different courts in different EU Member States gave conflicting final judgments on the same issue of patent validity or infringement.

Originator companies asked for interim injunctions in 225 cases, and were granted such injunctions in 112 cases. The average duration of the interim injunctions granted was 18 months.

The total cost of patent litigation in the EU relating to the 68 medicines on which litigation was reported for the period 2000-2007, is estimated to exceed € 420 million.

2.3. Oppositions and Appeals

(537) This section analyses oppositions and appeals filed by generic companies in respect of patents held by originator companies.

(538) The possibility of opposing an originator company's patent allows a generic company to seek legal clarification or remedy. At the end of the opposition procedure the patent-in-suit is either maintained (rejection of the opposition), revoked or amended.[279] Oppositions constitute a legal mechanism which enhances patent quality.

(539) In the previous chapter, the report analysed the litigation faced by generic companies, e.g. because originator companies invoke their patents against them. The opposition procedure is a way for generic companies to obtain verification of the validity and scope of an originator company's patent, which may be invoked in litigation. If, in the opposition, this patent is proved to be invalid, it will be either revoked or its scope will be reduced. This may then allow the generic company to enter the market without facing the risk of infringing that patent. However, oppositions can only be launched within a certain period after the grant of a patent.

(540) This section focuses on the opposition procedures before the European Patent Office (EPO). Appeals of EPO decisions on oppositions to the Boards of Appeal are also taken into account. National opposition procedures concerning national patents before the offices and bodies of the Member States are briefly considered.

(541) Opposition and appeal proceedings before the EPO are two separate and distinct procedures, the former being examined by the Opposition Divisions, the latter being examined by the Boards of Appeal. A similar separation of the two procedures is also seen in many national procedures. However, one aspect of this inquiry, and the subject of the present section, is how to assess companies' use of patents in their commercial strategies. The time taken before a final decision has been issued in a case, whether this be after opposition only or after opposition with a subsequent appeal, was therefore considered to be of greater importance than a detailed description of the individual stage, since it is only after a final decision has been issued that competing companies have a clear idea of where patent protection lies. Hence, within the context of this section, opposition and appeal procedures have been taken as a whole.

(542) Regarding opposition and appeal procedures, it should be noted that decisions of the EPO (including the Boards of Appeal) are valid in all European Member States where a national patent has been validated. However, as long as the EPO (including the Boards of Appeal) has not reached a final decision, national courts may still decide on the validity of a national patent which resulted from an EPO patent.[280] Nevertheless, some national courts regularly stay proceedings when an opposition procedure before

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[279] For further details see Chapter B.2.1.

[280] Indeed, even if the validity and scope of a patent was confirmed by the Opposition Divisions and the Boards of Appeal, it can still be challenged before court with national procedure.

EPO is pending, until the EPO has issued its decision. For further details on EPO and the appeal procedures, please refer to Chapter B.

(543) Before focussing on oppositions by generic companies against originator companies' patents, this section will first present data on oppositions in general, including oppositions by various types of opponents, e.g. other originator companies. More specifically, this general section provides information on the total number of oppositions by various types of opponents; a comparison between oppositions in pharmaceuticals and in all sectors; the INNs most opposed and the duration of opposition procedures. A brief overview of oppositions before the national offices and bodies of the Member States is also provided. Subsequently, a more detailed analysis is presented of all oppositions (including appeals), where generic companies opposed the patents of originator companies during the period 2000 - 2007.[281] The report presents the number of opposition procedures and opponents, and then goes on to examine the types of patents opposed. The section outlines the outcomes of the final opposition and appeal decisions. Finally, it looks into the cases where an originator company entered into a settlement with an opposing generic company.

2.3.1. General Information

2.3.1.1. Number of Opposition Procedures and Opponents

(544) In total, 170 opposition procedures against originator companies' patents were reported for the period 2000 - 2007. These opposition procedures concerned 73 distinct INNs out of the 219 INNs for which information was gathered as part of the sector inquiry.[282] In these 170 opposition procedures, a total of 343 opponents were active.[283]

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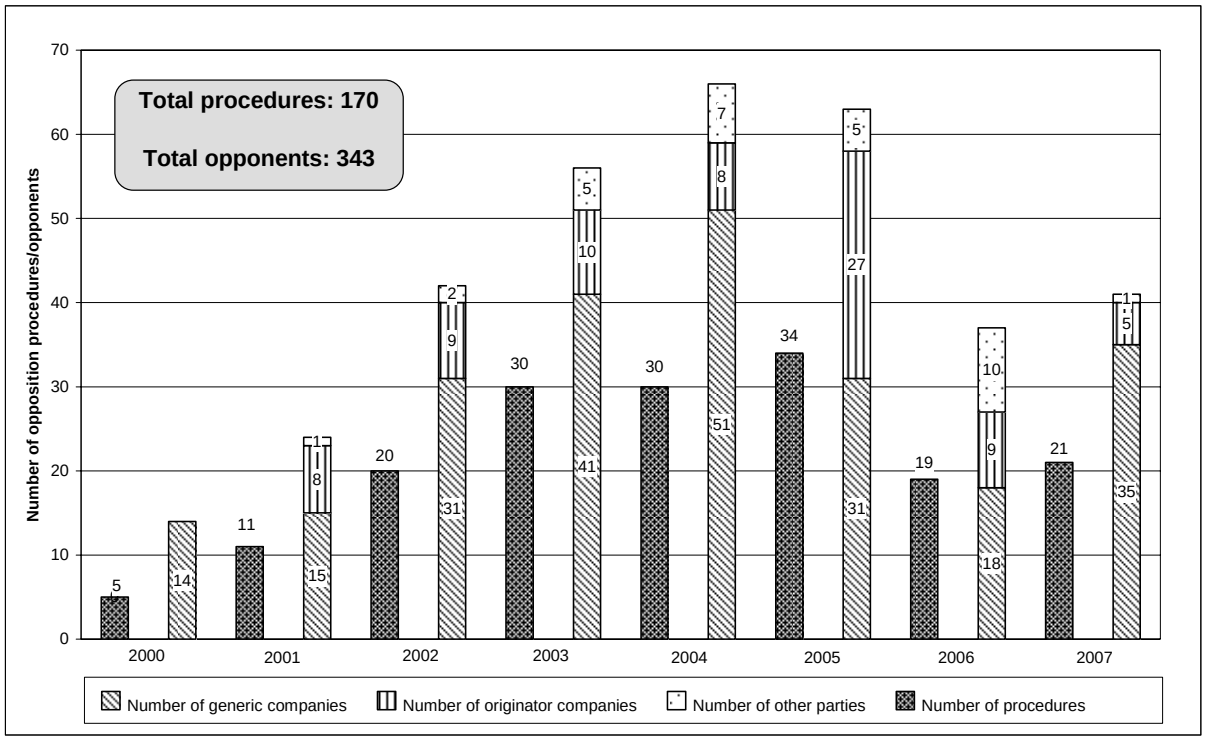
281 For the analysis of opposition procedures, in which originator companies oppose the patent of other companies, see Chapter C.3.3

282 For further information on the INNs most concerned, please see below Section C. 2.3.1.2.

283 The same companies may be involved in a number of opposition procedures.

Figure 81: Number of opposition procedures before EPO and type of opponents per year (2000-2007)



Source: Pharmaceutical Sector Inquiry

(545) Figure 81 above presents the total number of opposition procedures and opponents broken down by year[284] for the period 2000 - 2007. There are two bars for each year. The first bar indicates the number of opposition procedures and, separately, the second bar shows the number of opponents (relating to these procedures).

(546) Opposition procedures increased from five procedures in 2000 to 21 in 2007. They reached a peak in the years 2003, 2004 and 2005 when 30, 30 and 34 procedures were reported, respectively. The number of opponents follows a similar pattern, reaching a peak of 56, 66 and 63 opponents in 2003, 2004 and 2005, respectively.

(547) In Figure 81, the annual total number of opponents is further divided up into generic companies, originator companies and other opponents. The category of other opponents also includes the so-called "straw men". A straw man is a party filing oppositions and/or appeals on behalf of other parties, whose identity must not be revealed. Straw men are often employed if the actual opposing party does not wish to be known by the party opposed. As one generic company explained in this context:

> *"[To disclose] the identity of the opponent in an EPO opposition procedure increases the risk that the applicant starts litigation actions against the generic companies."*

284 The year refers to the start of the opposition procedure.

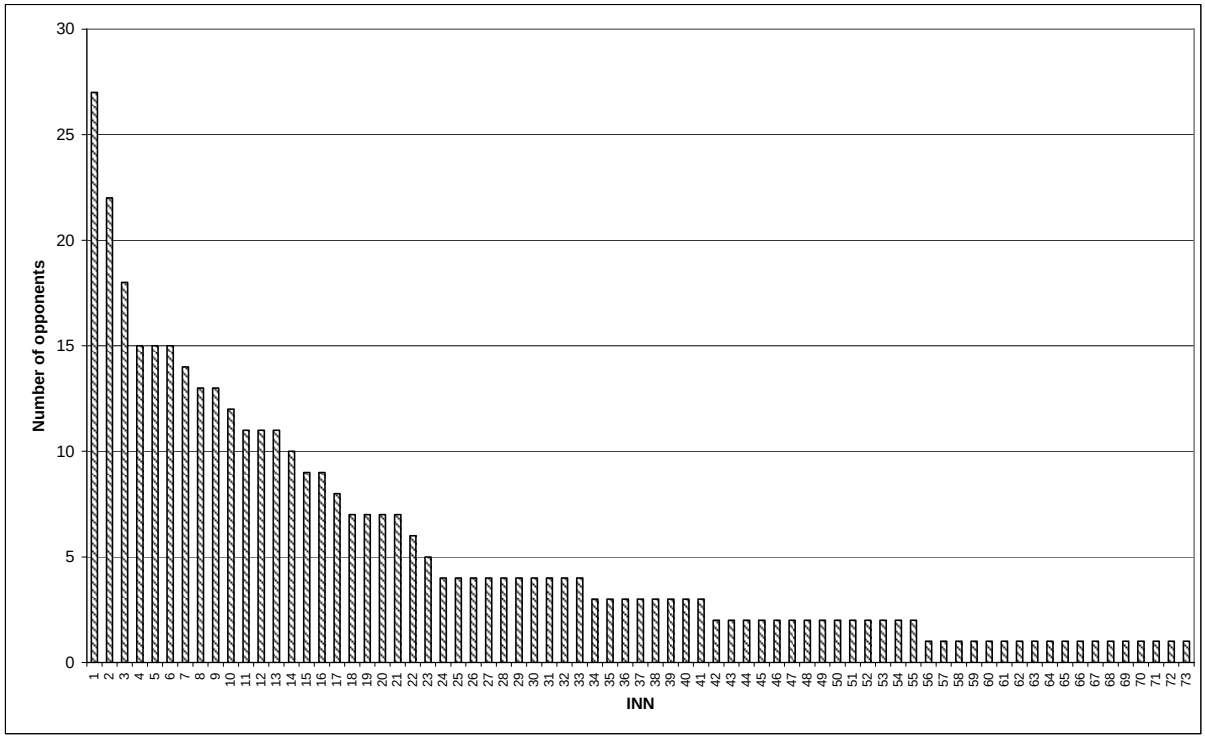
(548) Another generic company added:

> *"Straw man is a feature clearly to be maintained given the particularities of the patent system and the aggressivity of the originator companies."*

2.3.1.2. INNs most Concerned

(549) As mentioned earlier, information was gathered on oppositions concerning 219 INNs. Patents regarding 73 INNs where concerned by opposition, with certain patents relating to these INNs attracting far more oppositions than others.

Figure 82: INNs by number of opponents before the EPO (2000-2007)



Source: Pharmaceutical Sector Inquiry

(550) Figure 82 above lists the number of opponents for any of the 73 INNs concerned by oppositions.[285] This figure indicates that in the period 2000 - 2007 the bulk of opponents concerned only a part of INNs. Further analysis showed that around one third of the INNs most concerned by oppositions belonged to the top 20 best selling INNs within the E75 list and around a quarter of them belonged the top twenty best selling INNs within the T50 list.

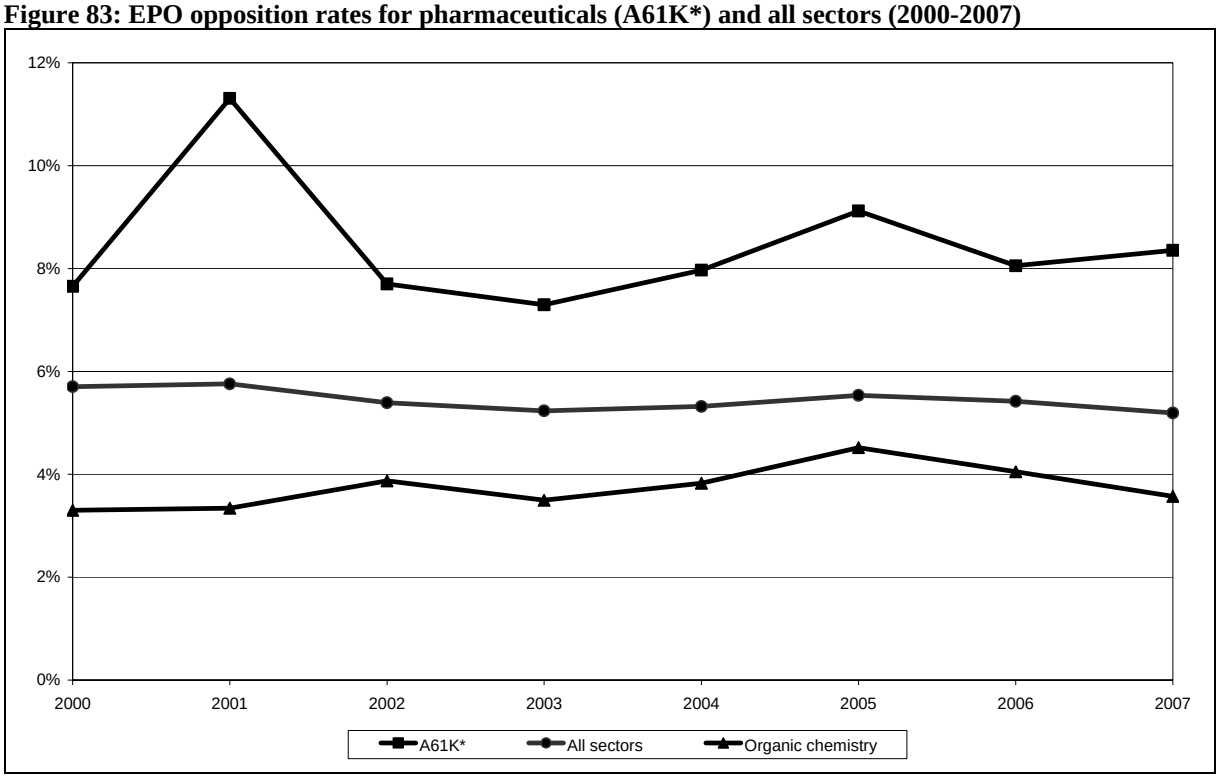
[285] An opponent involved in an opposition procedure concerning several INNs is counted as one opponent for each of the INNs.

2.3.1.3. Comparison between EPO Oppositions in Pharmaceuticals and in all Sectors

(551) For the purpose of the sector inquiry, it is also considered useful to compare the oppositions filed before the EPO in the pharmaceutical sector with the oppositions in organic chemistry as well as the ones filed in all sectors during the period 2000 - 2007, as provided by the EPO.

(552) Figure 83 illustrates that, in the period 2000 – 2007, the opposition rate (i.e. the number of oppositions filed per 100 granted patents) in the closest available proxy for pharmaceuticals (A61K*)[286] is consistently higher than the opposition rate in organic chemistry and all sectors taken together. In A61K* the opposition rate ranged from 7.3% to 11.3%, compared to organic chemistry where it ranged from 3.3% to 4.5% and all sectors where the opposition rate was between 5.2% and 5.8%.

Figure 83: EPO opposition rates for pharmaceuticals (A61K*) and all sectors (2000-2007)



Source: Pharmaceutical Sector Inquiry (based on data EPO)

2.3.1.4. Duration of Procedures (Oppositions and Appeals)

(553) The following section analyses the duration of procedures, taking into account all procedures which were reported as final, the earliest starting in 1999 and the latest ending in 2008.[287] The duration indicated contains procedures where Opposition

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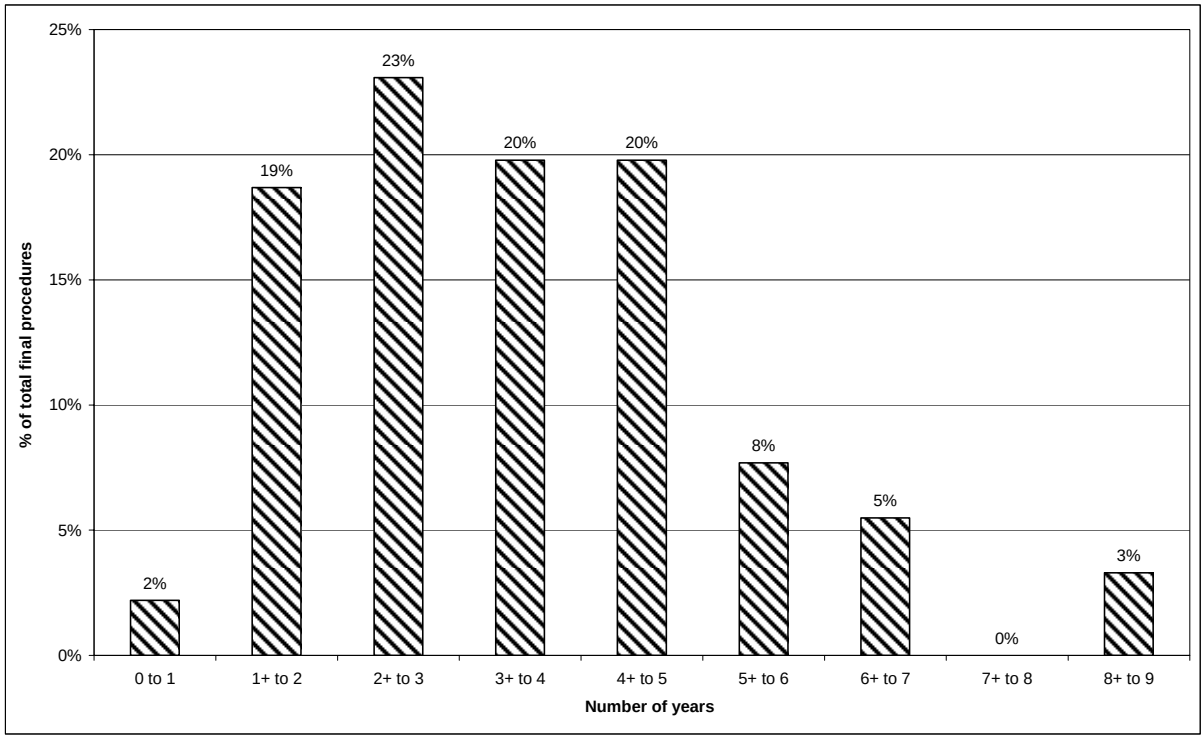
286 For further explanation on A61K*, see Chapter C.1.1.2.

287 In order to provide a better sample, the analysis of Figure 84 considers 91 opposition procedures (including appeals) in the extended period 1999 to 2008. Moreover, the duration is calculated from the

Divisions or Boards of Appeal have rendered final decisions (*res iudicata*). In other words, in this section the whole duration is measured which is on average necessary to receive a final decision on the validity and/or the scope of an EPO patent of an originator company.

Figure 84: Average duration to achieve final decision on validity and/or scope of EPO patents as percentage of the total (1999-2008)



Source: Pharmaceutical Sector Inquiry

(554) Figure 84 above shows the percentage of total final procedures lasting an average number of years. It can be seen that only approximately 21% of the opposition and appeal proceedings receive a final decision within two years. In most cases (approximately 79%), it takes more than two years to reach a final decision and, for some cases, it can take up to nine years in total before a final decision is reached. At the same time, the average duration of the opposition procedure was approximately 3.6 years from the initiation of the procedure until the final ruling (including in the sample final cases with and without appeal). In this context, an originator company stated:

> *"It will often take many years to determine an opposition, given the pace at which the EPO and its appeal procedures operate."*

starting date of the opposition procedure, it does not consider the nine months filing period for opposing a patent that reasonably prolongs the legal uncertainty of the patent validity.

(555) The sector inquiry also gathered evidence that originator companies whose EPO patents are opposed may, in some instances, prolong the opposition procedure. Examples of statements from different generic companies include the following:

> *"In our experience the opposed originator company practically always tries to prolong both the EPO opposition and the appeal procedure."*

> *"The originator companies usually try to extend these procedures as long as they possibly can."*

> *"In cases where we filed an opposition to a European Patent granted to an originator company, we have experienced that the originator company prolonged the opposition procedure by requesting and obtaining a six-month extension of the time to reply to the opposition. This is however in accordance with the provisions of the EPC, that allow this extension request. We don't have a similar experience in appeal procedures."*

> *"[The effect of prolongation of procedures on our company is] the lack of commercial certainty, since the originator company may sue the opponent company for patent infringement before the national courts on the basis of patents that, in our view, have been improperly granted and, therefore, opposed."*

(556) A number of opposing originator companies indicated that in view of the duration of these procedures, they are obliged to have recourse to national courts in order to gain some legal certainty. One company explained:

> *"[…] Therefore it can take up to 7 years or something more to get a final decision from the EPO. Some National Courts are particularly good at providing decisions quickly. […] National revocation action or actions may be filed in parallel to a European Opposition in key territories or territories where prompt decision may be expected. Some National Courts may stay any such actions until the final outcome of the European opposition is known, but many (for example UK and Belgium) will not if it appears that legal certainty is important and the proceedings at the EPO have some time still to run.*
>
> *Where a company has a particular product to launch in a particular jurisdiction it may prefer to launch national revocation proceedings because they are often determined (e.g. in the UK) inside 1 year."*

(557) Out of the 73 INNs concerned by opposition and the 78 INNs concerned by litigation in the period 2000 - 2007, 40 INNs were concerned by both opposition and litigation in that period.

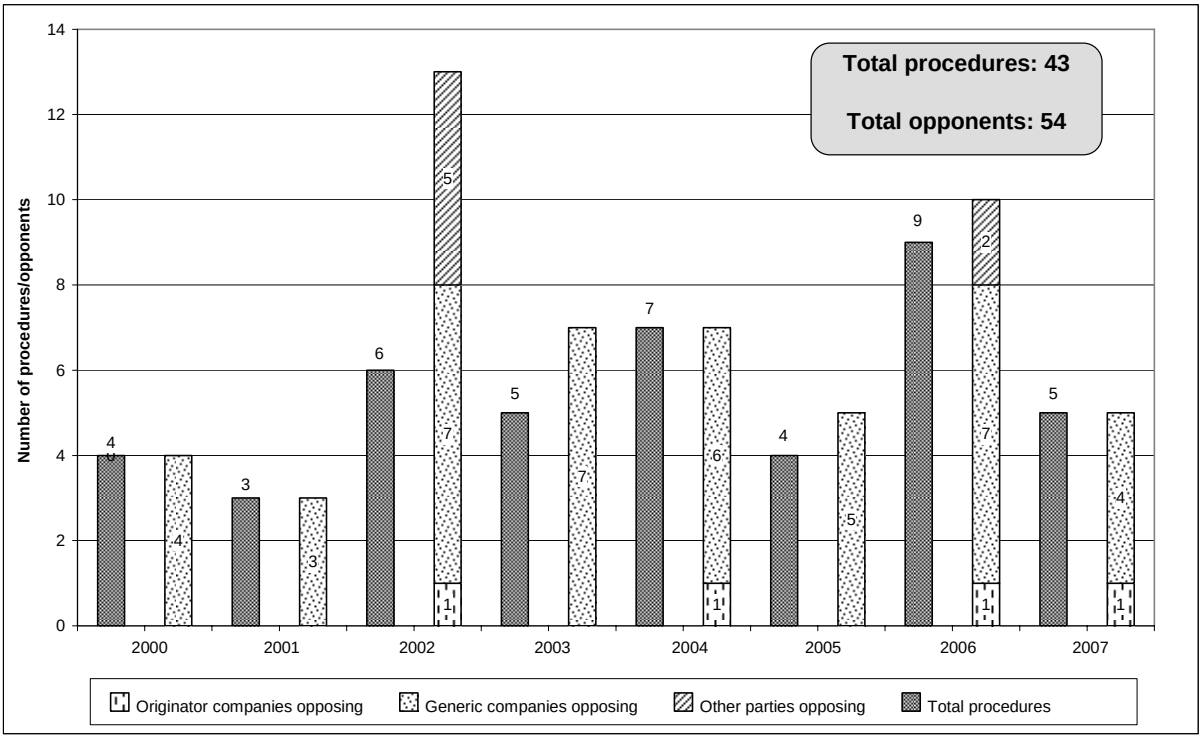
(558) It must be stressed that, unlike a decision of EPO or the Board of Appeal which clarifies the patent situation for all designated contracting states, the judgments of national courts are only valid for the Member State in question. As shown above for

generics,[288] this could, in principle, multiply the number of Member States where litigation must be carried out.

2.3.1.5. National Opposition Procedures

(559) For the sake of completeness, the report provides general data on national procedures before the offices and bodies of the Member States concerning the 219 INNs for which information was collected. However, it should be emphasised that the amount of information gathered on oppositions before EPO (including appeal) was substantially greater than that on comparable national procedures. The information provided here on the number of national procedures in the period 2000 - 2007 gives a conservative estimate.

Figure 85: Number of national opposition procedures before offices and bodies of the Member States (2000-2007)



Source: Pharmaceutical Sector Inquiry

(560) Figure 85 above presents the total number of opponents and opposition procedures at national patent offices, broken down by year for the period 2000 - 2007. For each year, Figure 85 provides two bars. The first bar indicates the number of opposition procedures at national patent offices and, separately, the second bar shows the number of opponents (relating to these national procedures), broken down into generic companies, originator companies and other opponents.

[288] For further details see Chapter C.2.2.

(561) The number of national opposition procedures ranged from three in 2001 to nine in 2006. Compared to the number of opposition procedures before the EPO (see Figure 86), the number of national opposition procedures is substantially lower throughout the period. The number of opponents during the period was also considerably lower than for the EPO oppositions. It reached a peak of 13 in 2002, but otherwise remained fairly stable with between three and ten opponents per year.

2.3.2. Opposition and Appeal Procedures with Generic Companies as Opponents

(562) After the presentation of the general information on opposition procedures, the following section analyses opposition and appeal procedures before the EPO (including appeal) where a generic company opposed the patent of an originator company. The section starts by analysing the types of patents opposed and then goes on to examine the outcome of opposition and appeal procedures in further detail.

2.3.2.1. Number of Opposition Procedures, Opponents and Types of Patents Opposed

(563) A total of 109 opposition procedures in which generic companies opposed the patent of an originator company were reported in the period 2000 - 2007. Overall, generic companies acted as opponents on 236 occasions. These numbers further illustrate that, on average, there are at least two[289] generic companies opposing the originator patent in any given procedure.[290]

(564) Regarding the types of patents opposed, the sector inquiry shows that generic companies concentrate their oppositions on secondary patents. Originator companies may be aware of this, as the following statement by an originator company illustrates:

> *"Oppositions are more often filed against [our company's] secondary patents […] than patents that protect new compounds. […] [G]eneric companies do monitor when [our company's] patents are granted and then have the opportunity to (and in fact do) file oppositions."*

(565) Concerning opposition procedures, a generic company indicated:

> *"In the future we will use more the opposition procedure because many non-inventive patents are being approved which affect us due to the heavy abuse of the patent system."*

(566) Figure 86 below shows the total number of opposition procedures and opponents (generic companies) by year for the period 2000 - 2007. It provides two bars for each

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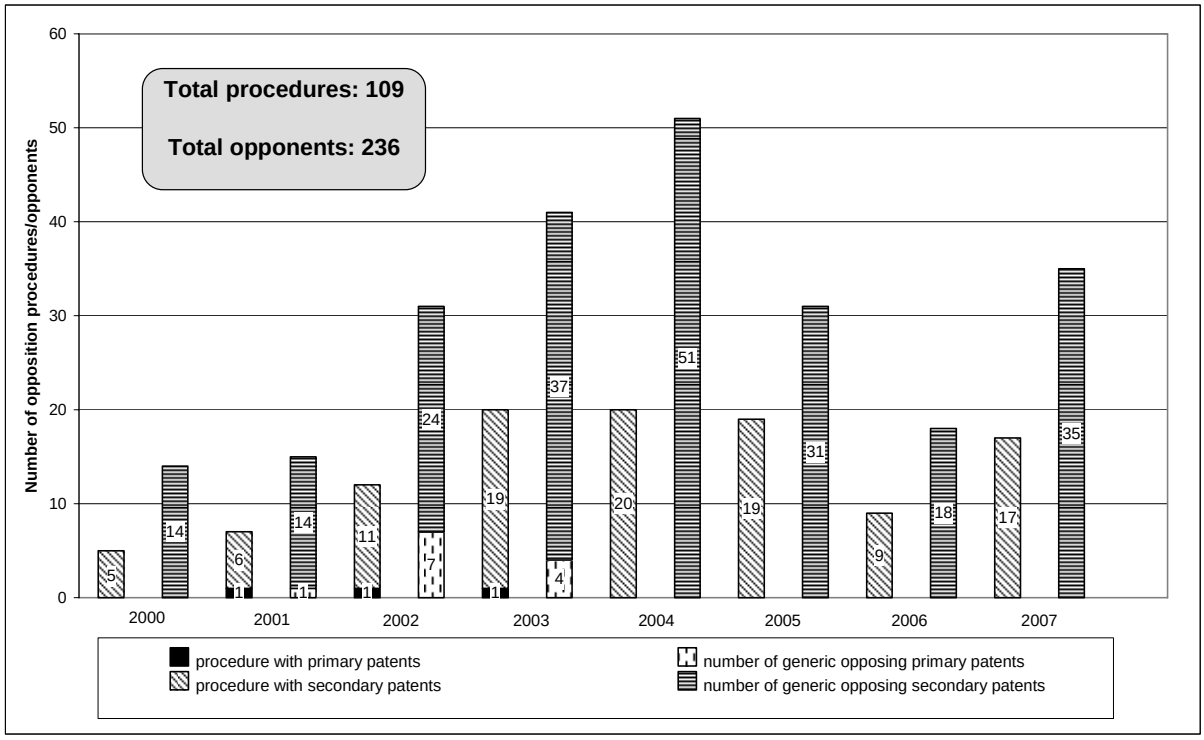
[289] 236/109=2.16.

[290] However, this does not mean that in the 109 opposition procedures the patents of 109 different originator companies were opposed and that the 236 opponents were 236 different generic companies. In fact, one and the same generic company and originator company can be involved in a number of opposition procedures.

year, one relating to the number of procedures and the other relating to the number of opponents (relating to these procedures). Moreover, it distinguishes between opposition procedures related to primary and secondary patents of originator companies. It also distinguishes the opponents according to the same criterion. Figure 86 illustrates the fact that practically all opposition procedures (106 out of 109) concern secondary patents of originator companies. Such procedures peak in particular in the period from 2003 to 2005, where respectively 20, 20 and 19 opposition procedures against secondary patents were begun. Only in the years 2001 - 2003 were few primary patents opposed.

Figure 86: Number of opposition procedures before the EPO initiated by generic companies per primary/secondary type (2000-2007)



Source: Pharmaceutical Sector Inquiry

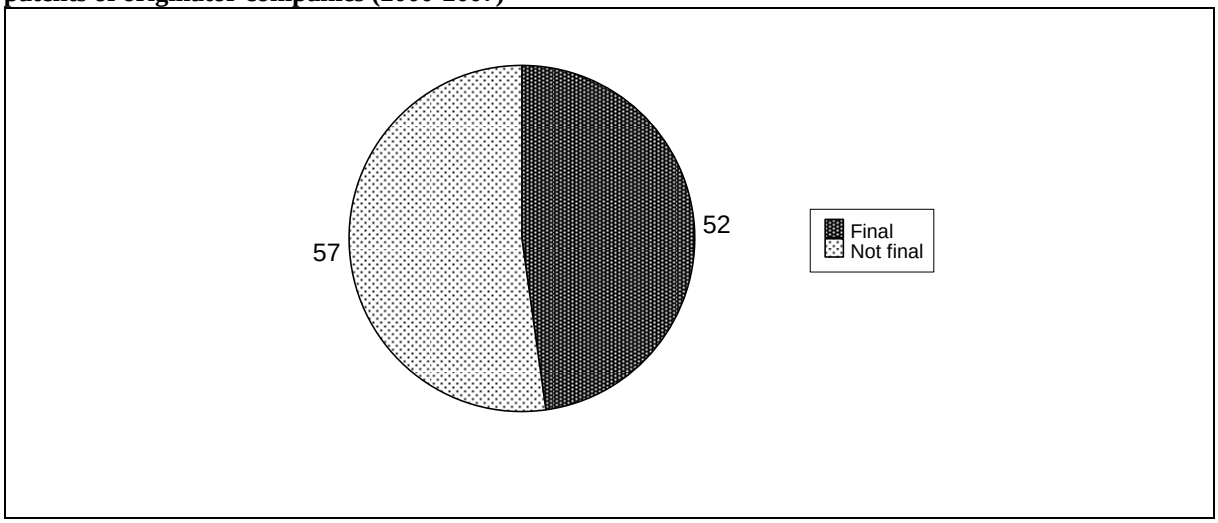
2.3.2.2. As indicated Analysis of the Outcomes of Final Opposition and Appeal Decisions

(567) This section analyses the final outcomes of opposition or appeal procedures (*res iudicata*). In principle, no further distinction between the two is made, as what is of interest here is the eventual fate of the originator company's patent.

(568) By Figure 87, a final decision was reached in 47.7% (52 out of 109) of the procedures initiated in the period 2000 - 2007. In the remaining 52.3% (57 out of 109) a decision is still outstanding. This can be partly explained by the very lengthy procedures, as mentioned previously.[291]

[291] For further details see Subsection C.2.3.1.4.

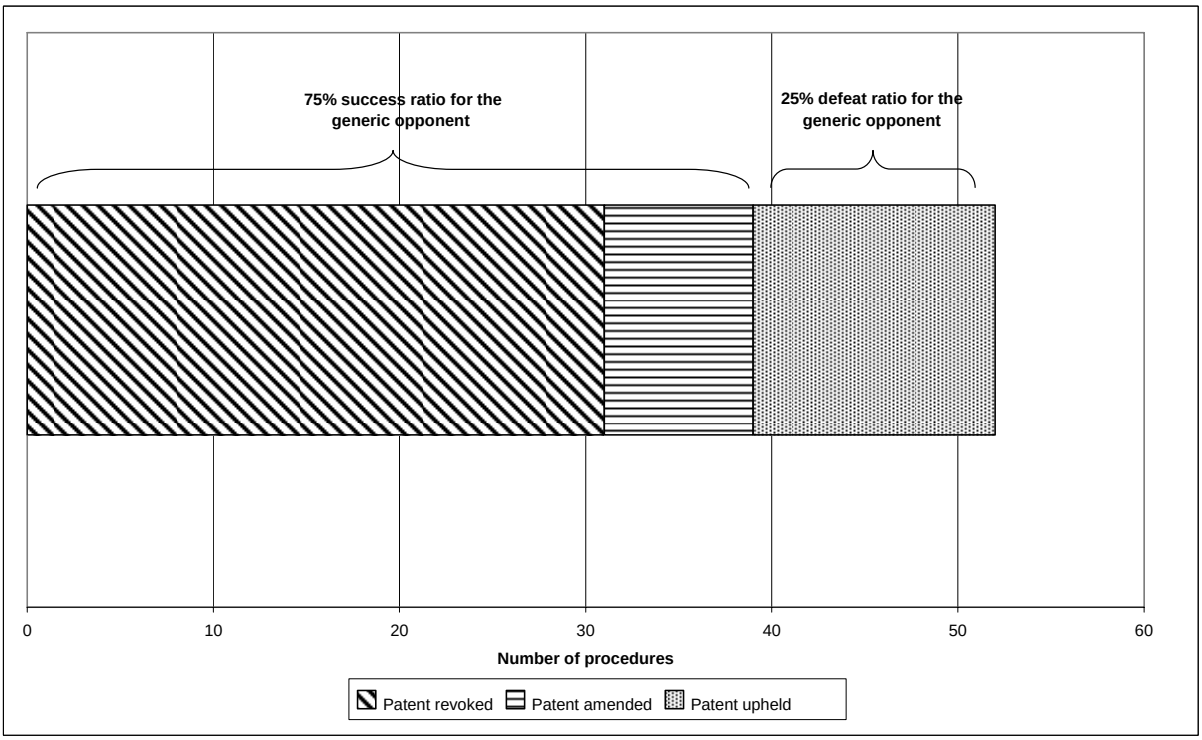
Figure 87: Final and pending opposition and appeal procedures involving generic companies against the patents of originator companies (2000-2007)



Source: Pharmaceutical Sector Inquiry

(569) Figure 88 reports the number of cases in which the originator companies' patents were revoked, amended or upheld by final decision. The following picture emerges: in 59.6% (31) of all final cases, the originator company's patent was revoked and in 15.4% (8) the patent was reduced in scope (reported as amended. Revoked and amended are reported jointly as success for the generic company). Only in 25% (13) of the final cases, was the originator company's patent upheld (reported as a defeat for the generic company).

Figure 88: Final outcomes of opposition and appeal procedures involving generic companies against the patents of originator companies (2000-2007)



Source: Pharmaceutical Sector Inquiry

(570) In 75% of the cases (39) the generic company was successful, as the originator company's patent was either revoked or restricted in scope. Only in 25% of the cases (13) was the originator company able to successfully defend its patent. Three of the final decisions related to (and revoked) a primary patent, whilst the remaining ones related to secondary patents.

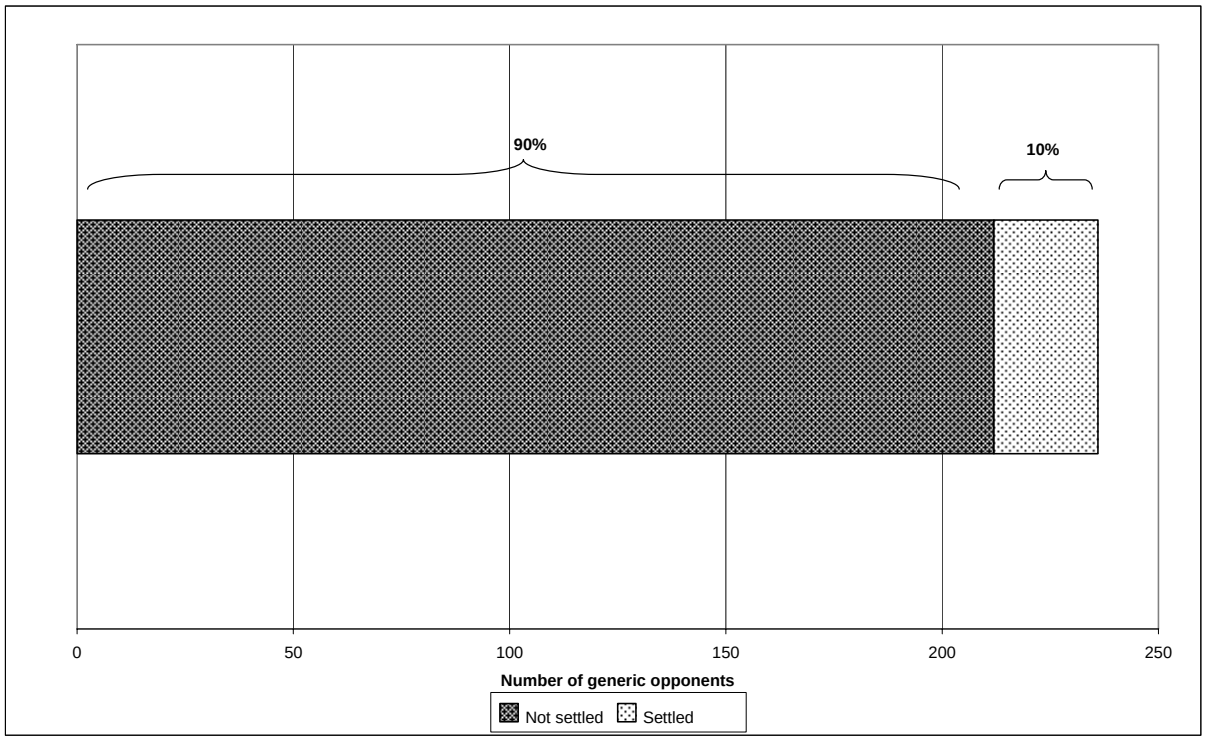
2.3.2.3. Settlements

(571) The sector inquiry's documents show that settlements between originator and generic companies may also take place in the context of opposition procedures. As one originator company stated:

> *"In subsequent negotiations, [a generic company] consented to withdraw the opposition [against our patent] in consideration for the amendment and a narrowing down of the process claims of the patent."*

(572) Figure 89 shows that respondent originator companies settled with 24 of the 236 opposing parties (10%). These settlements concerned 13 different opposition procedures. The settlements are described in more detail in Section C.2.4.1.

Figure 89: Number of settlements with generic companies as opponents (2000-2007)



Source: Pharmaceutical Sector Inquiry

Summary

The sector inquiry confirms that the opposition rate (i.e. the number of oppositions filed per 100 granted patents) before the EPO is consistently higher in the closest available proxy for the pharmaceutical sector than it is in organic chemistry and in all sectors (overall EPO average). Based on the sample investigated, generic companies almost exclusively opposed secondary patents. They prevailed in approximately 75% of final decisions rendered by the EPO (including the Boards of Appeal) during 2000 to 2007, either by achieving the revocation of the patent or by having its scope restricted.

Even though generic companies are very successful in opposing originator company secondary patents, approximately 80% of final decisions took more than two years to obtain. The duration of opposition procedures (including appeal procedures) considerably limits the generic companies' ability to clarify the patent situation of potential generic products in a timely manner.

2.4. Settlements and other Agreements

2.4.1. Patent Settlement Agreements between Originator and Generic Companies

(573) The aim of this chapter is to describe the patent settlement practice between originator and generic companies in the EU during the period from January 2000 to June 2008. More specifically, this chapter will describe the general considerations of companies and the key factors they take into account when deciding whether or not to enter into a patent settlement agreement. Secondly, this chapter will contain a more detailed description of patent settlement agreements concluded in the EU between January 2000 and June 2008. Finally, the chapter contains a brief overview of the established patent settlement practice in the USA, as well as a comparison of settlement trends in the EU and USA.

(574) It should be noted first of all that the aim of this chapter is not to provide guidance on whether certain types of settlement agreements could be deemed compatible or incompatible with EC competition law.[292] Such an assessment would require an in-depth analysis of the individual agreement, taking into account the factual, economic and legal background.

2.4.1.1. Patent Settlements in the EU: an Overview of the Main Characteristics

(575) Patent settlement agreements are commercial agreements to settle actual or potential patent-related disputes. Patent settlement agreements are concluded in order to resolve claims in patent disputes, opposition procedures or litigation where no final adjudication has been handed down or there has not yet been a court proceeding. The primary aim of a settlement agreement is to end the dispute, opposition procedure or litigation.

(576) Patent settlements are fact-specific, depending on the dispute at issue. As they are commercial agreements, they also reflect the negotiated positions of the parties. Consequently, the specific contents and terms of settlement agreements vary.

(577) However, certain basic elements and features are found in all EU settlement agreements between originator and generic companies. First, the object of a settlement agreement is to resolve the actual or potential dispute, opposition procedure or litigation concerning the manufacturing and/or marketing of a generic version of a product which is claimed to be protected by a patent. Secondly, the geographic scope of an EU settlement agreement typically covers those Member States in which the dispute, opposition or litigation has occurred and possibly territories in which there is a high probability of it occurring. Finally, patent settlement agreements in the EU are usually intended to be the full and final settlement of the specific claims of the parties.

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[292] See Annex to Chapter EC Competition Law (Annexes to Chapter A).

(578) As will be explained in more detail in subsequent sections, the starting point for companies to conclude a settlement is that they disagree at the outset of the litigation/dispute/opposition about whether the patent of the originator company is valid and/or whether the manufacturing or sales activities of the generic company infringe the originator company's patent. As in any other area of commercial disagreement, the parties concerned may have an interest in ending a dispute, opposition or litigation and instead reaching a settlement as a compromise. The parties may prefer to discontinue the dispute or litigation because it proves to be costly and time-consuming, and might also be unpredictable in its outcome. Settlements are thus a generally accepted way of ending disputes, opposition procedures and litigation.

(579) However, as shown by the enforcement action of the USA competition authorities, in particular the Federal Trade Commission, it might also be argued that settlements contain arrangements that could fall within the scope of competition rules. A patent settlement agreement might, for example, lead to a delay in a generic product's entry in a specific market in return for a payment by the originator company to the generic company. Ultimately, it is the consumer who pays the price for such a delay in market entry.

(580) For the purposes of the sector inquiry, detailed questionnaires were sent to both to companies that are producers of originator medicines and to companies that are producers of generic medicines. In particular, the Commission's services requested them to submit copies of all patent settlements concluded between originator companies and generic companies for the period from January 2000 to June 2008. Companies were asked to submit the complete settlement agreements, including annexes, as well as subsidiary and related agreements (e.g. licence, distribution, supply agreements). In total, 43 originator companies and 27 generic companies submitted comprehensive replies to the questionnnaires.[293]

(581) In total, 207 patent settlement agreements were submitted. Figure 90 breaks down their number on a yearly basis. In the period 2000 – 2002, the number was lower than for the last six years in which, on average, some 25-30 patent settlement agreements were concluded every year in the EU; the exception was the year 2005, when 53 settlements were concluded.

(582) Figure 91 shows the number of INNs covered by settlements per year. As is clear from the figure, the number has increased over the last eight years. In the first three years, from 2000 to 2002, four INNs were, on average, covered by settlements per year. In the period from 2003 to 2005, the average was eleven and in the last three years, an average of 14 INNs were covered per year.

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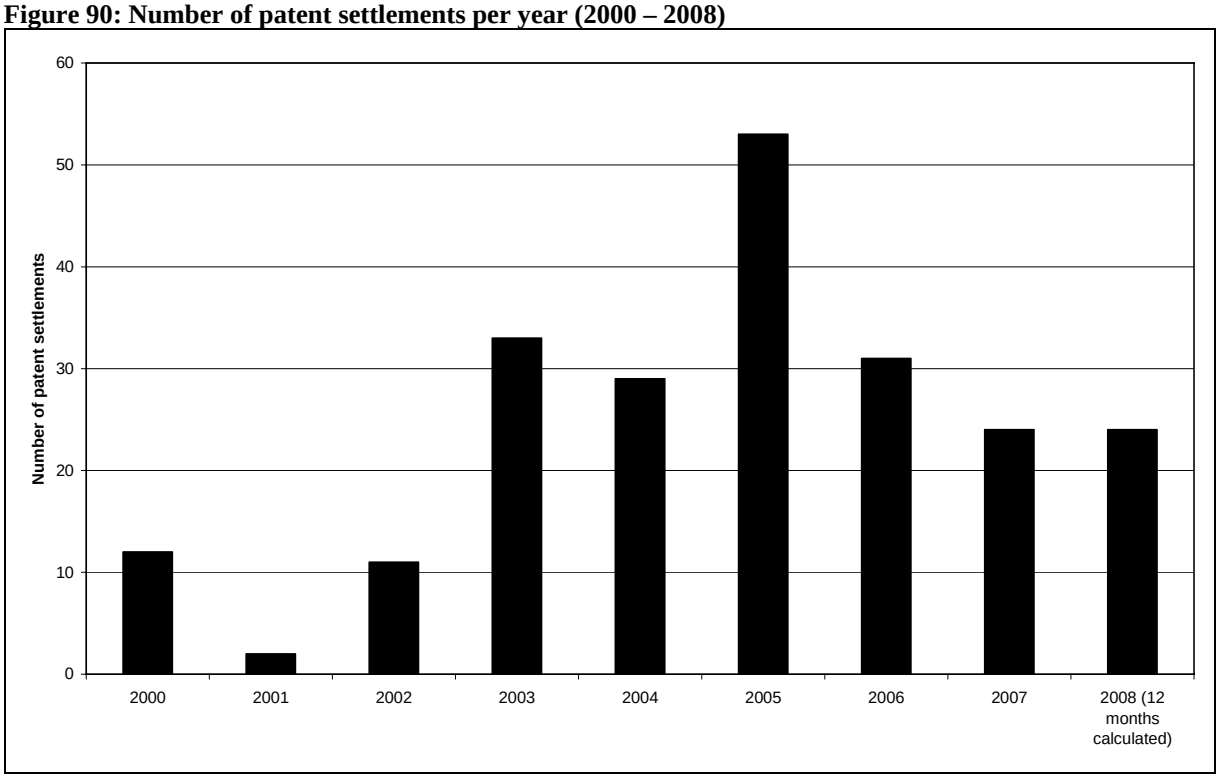
[293] Initially, the Commission sent the questionnaires to 46 originator companies and 39 generic companies. Some companies were, however, omitted from the scope of the sector inquiry, since it became clear that they were not producers of medicinal products and were therefore unable to contribute to the sector inquiry.

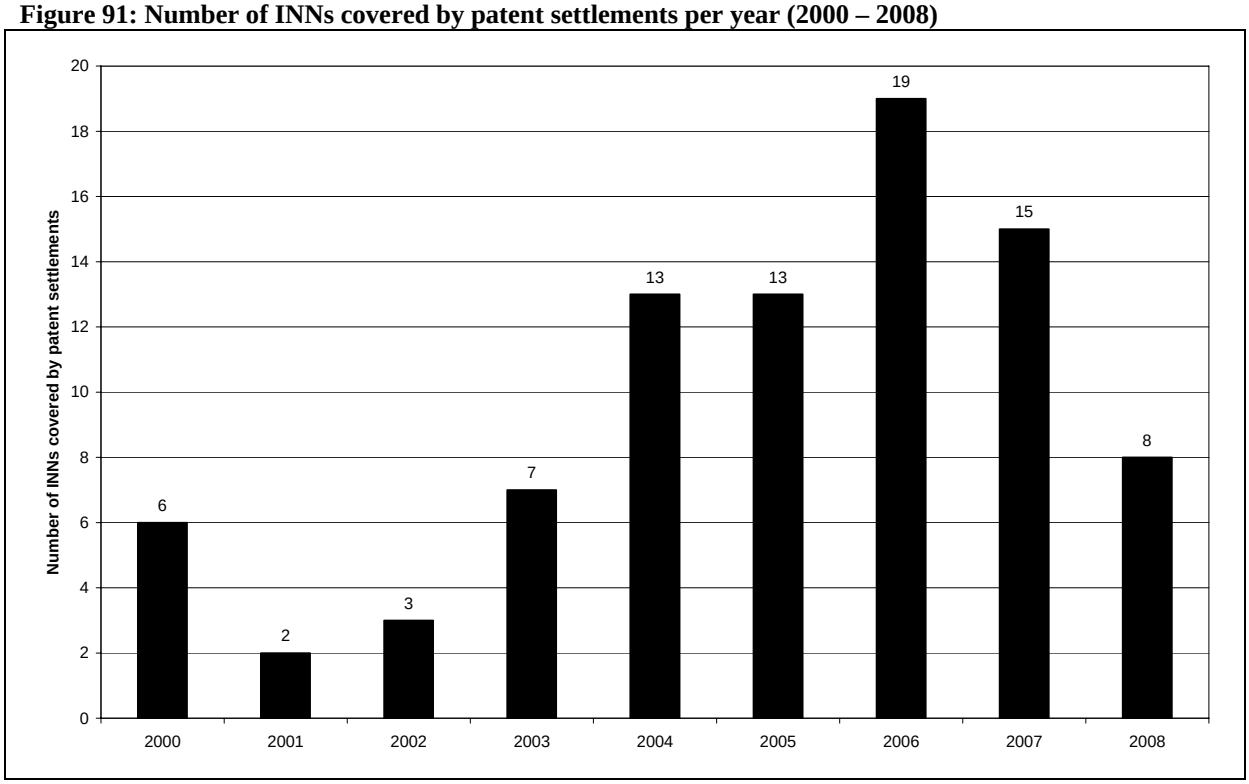
Figure 90: Number of patent settlements per year (2000 – 2008)



Source: Pharmaceutical Sector Inquiry

Note: The figure for 2008 (24) is calculated on the basis of 12 settlement agreements received by the Commission which had been concluded in the first 6 months of 2008.

Figure 91: Number of INNs covered by patent settlements per year (2000 – 2008)

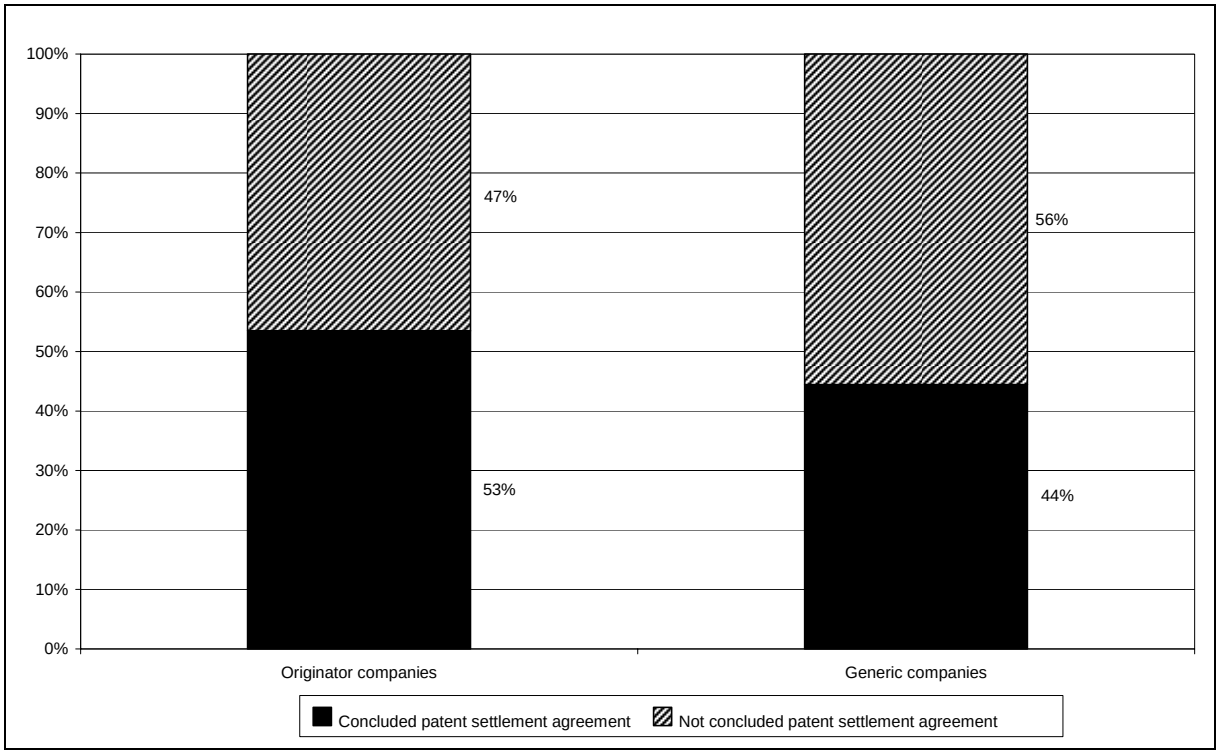


Source: Pharmaceutical Sector Inquiry

(583) Out of the 43 originator companies that responded to the questionnaires during the sector inquiry, more than a half (23 companies or 53%) had concluded settlement

agreements with generic companies. As far as generic companies are concerned, 44% of the 27 generic companies that responded to the Commission's questionnaires had concluded settlement agreements with originator companies.

Figure 92: Percentage of originator companies and generic companies that had entered into patent settlements



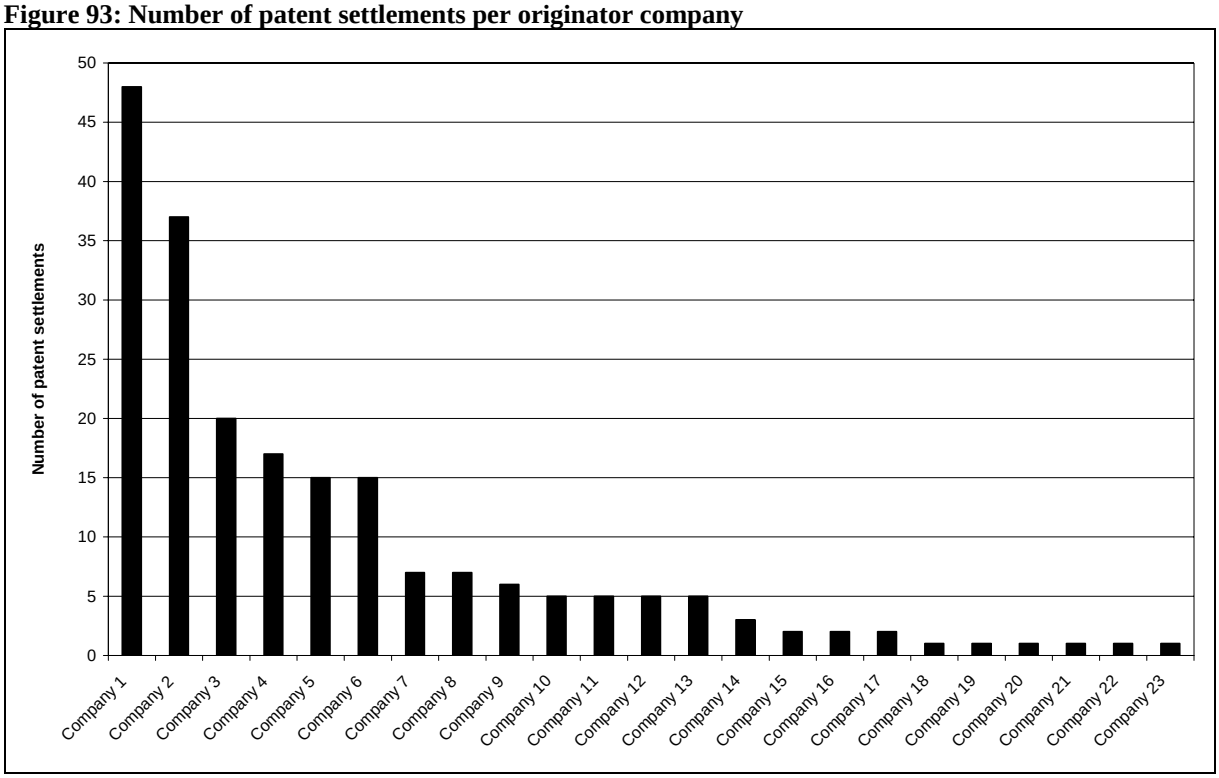
Source: Pharmaceutical Sector Inquiry

(584) Figure 93 gives the number of settlement agreements concluded by each originator company. As mentioned above, a total of 23 originator companies concluded settlements. There was a large variation in the number of settlements concluded by originator companies with two companies accounting for 85 of the 207 settlements (41%). In total, more than two thirds of all patent settlement agreements were concluded by the five originator companies with the highest number of patent settlements.

(585) Whereas the majority of the findings in this report are based on a selection of some 219 INNs[294], the findings in this chapter are not limited to that particular selection. Companies were asked to submit all settlements, irrespective of the INN concerned. Nonetheless, of the 49 INNs for which a patent settlement had been concluded, 42 INNs - or 86% - were included in the Commission's initial selection of INNs. In total, patent settlements had therefore been concluded for 19% of the INNs in the selection (see Figure 94).

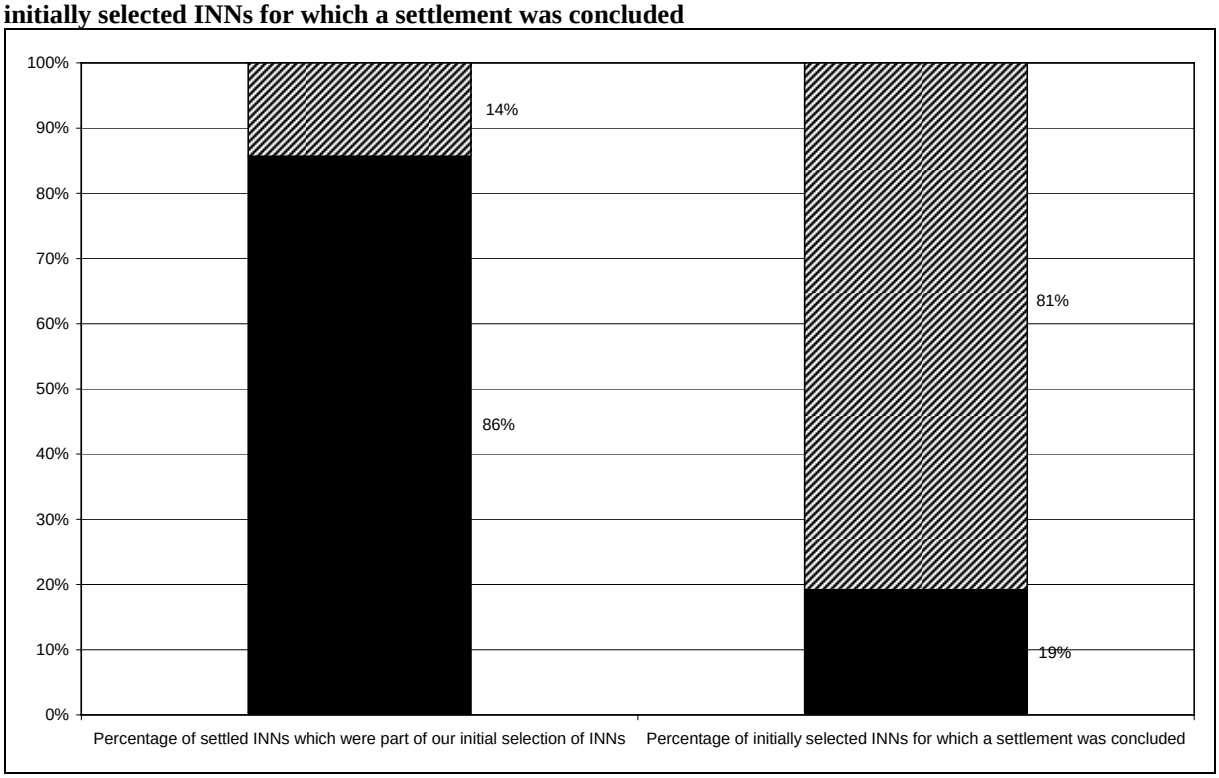
294 See Annex Methodology (Annexes to Chapter A).

Figure 93: Number of patent settlements per originator company



Source: Pharmaceutical Sector Inquiry

Figure 94: Percentage of settled INNs which were part of the initial selection of INNs & number of initially selected INNs for which a settlement was concluded

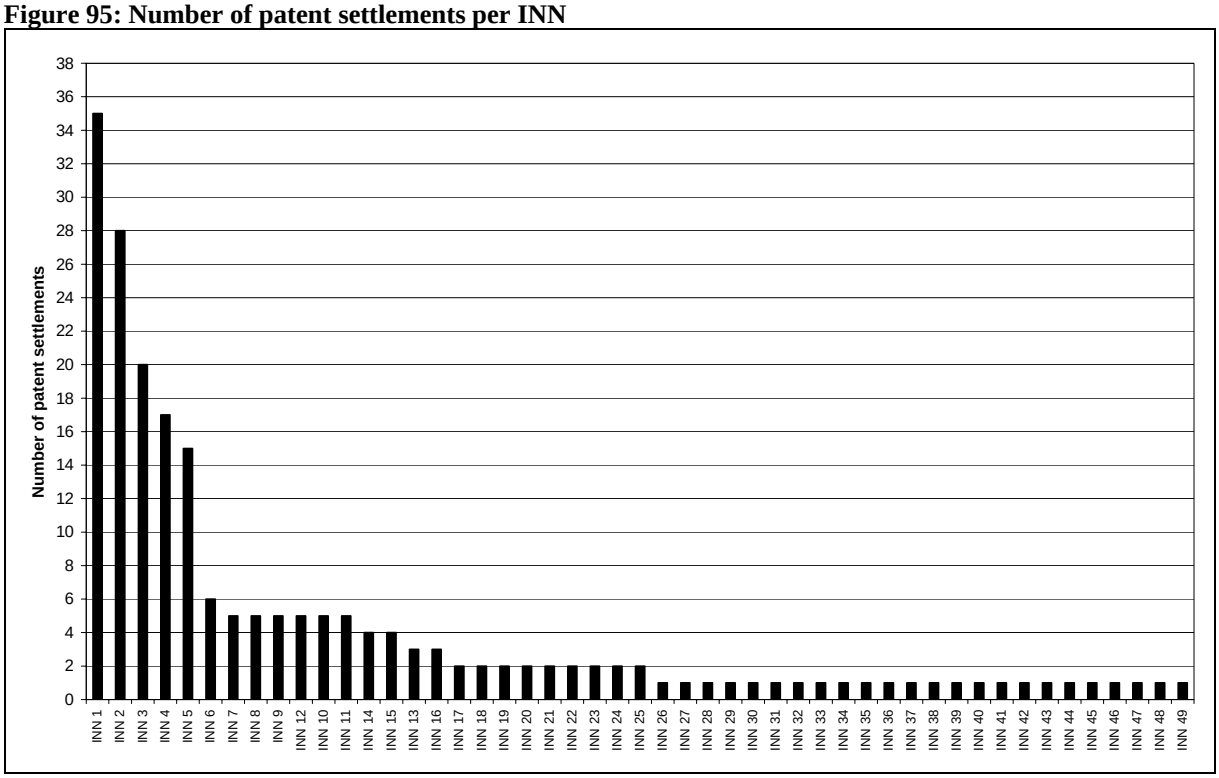


Source: Pharmaceutical Sector Inquiry

(586) Figure 95 shows the number of settlement agreements concluded for each of the 49 INNs. It is clear that for certain INNs companies have concluded a significant number of patent settlement agreements. In particular, it is interesting to note that for the first

two INNs, 63 settlements were concluded, which represents 30% of the total settlement agreements. Of the 49 INNs, 31 (63%) were among the best-selling medicines. Of the 15 INNs with the highest number of settlements, 11 (73%) were among the best-selling medicines which lost exclusivity (E75).[295]

Figure 95: Number of patent settlements per INN



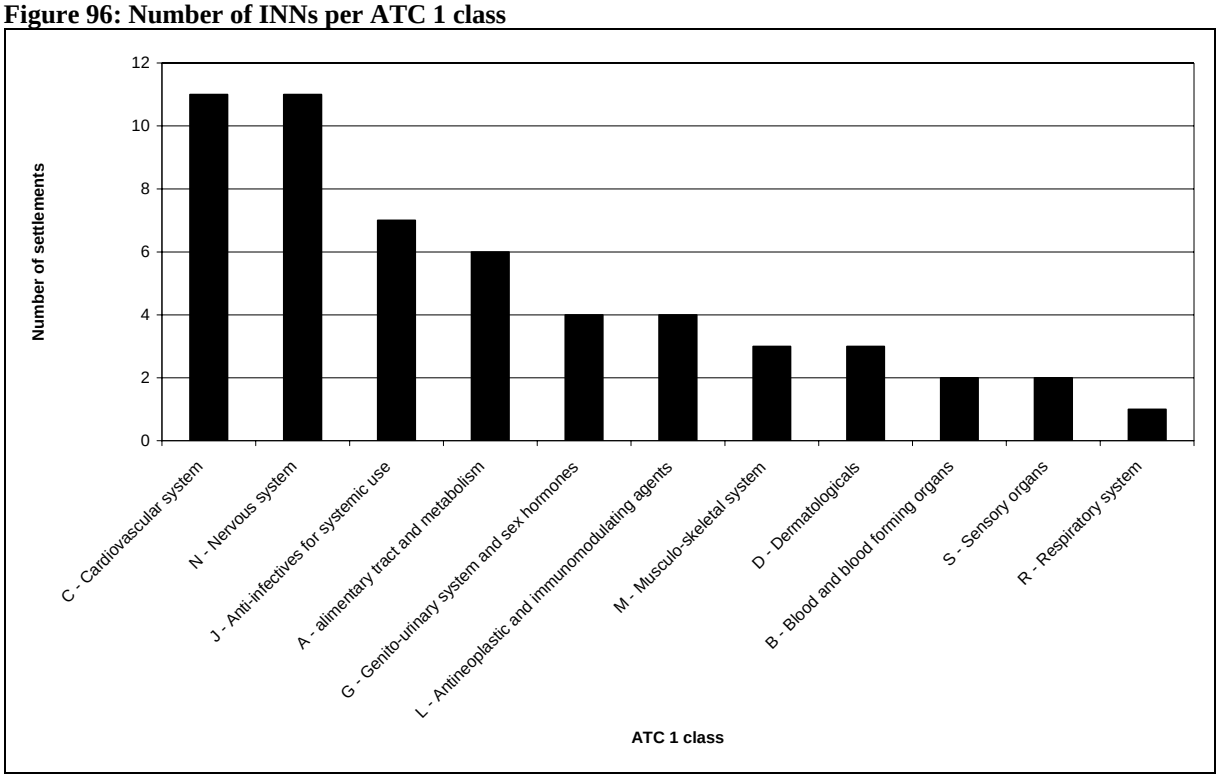
Source: Pharmaceutical Sector Inquiry

(587) As Figure 96 shows, the 49 INNs covered 11 of the 14 ATC 1 therapeutic classes in the ATC classification system[296]. Certain ATC 1 therapeutic classes had a higher number of INNs for which a patent settlement had been concluded. The two ATC 1 therapeutic classes with the most INNs were the cardiovascular system (ATC C) and the nervous system (ATC N), each with eleven INNs, followed by the therapeutic classes: J (Anti-infectives for systemic use) and A (alimentary tract and metabolism) with eight and six INNs respectively. The only ATC classes not represented were: H (Systemic hormonal preparations, excluding sex hormones and insulins), P (Antiparasitic products, insecticides and repellents) and V (Various).

295 For more information on the E75 list see Annex Methodology (Annexes to Chapter A).

296 For an explanation of the ATC system see the glossary.

Figure 96: Number of INNs per ATC 1 class

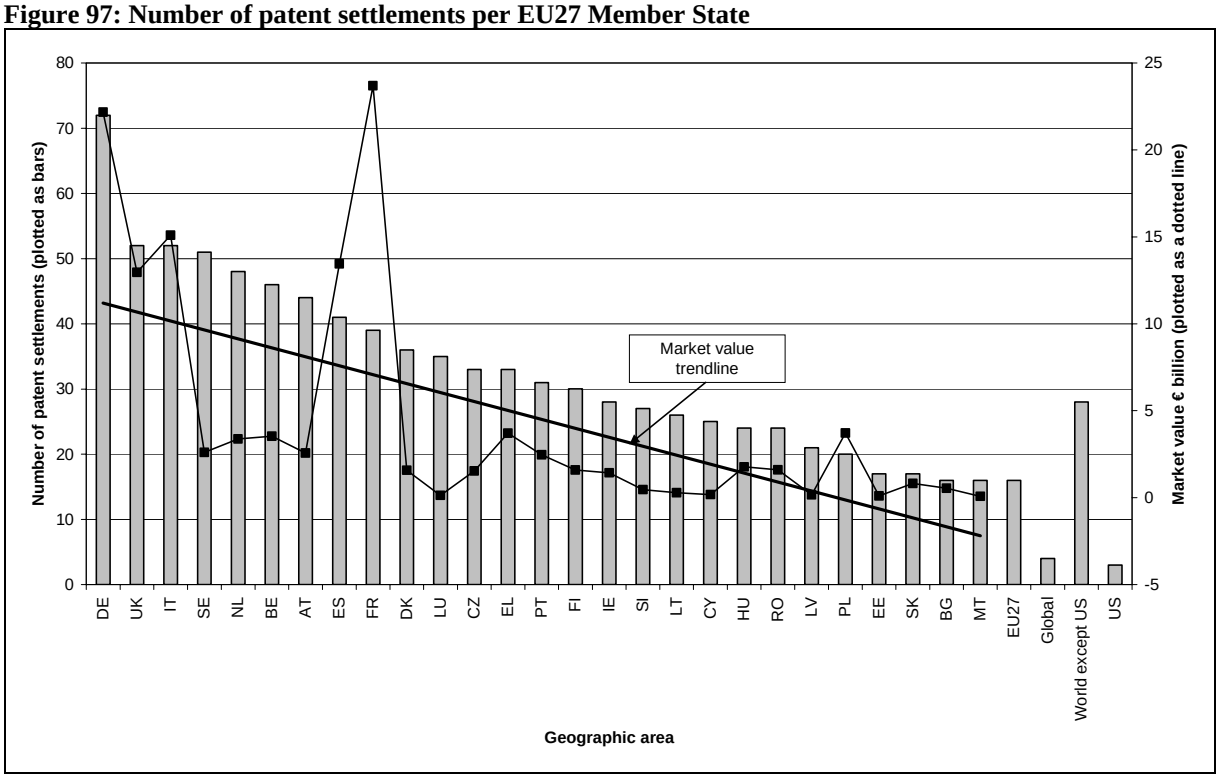


Source: Pharmaceutical Sector Inquiry

Note: Some INNs are registered in more than one ATC 1 class. The total number of INNs in the figure therefore does not match the total number of INNs for which a settlement was concluded.

(588) Figure 97 breaks down the number of settlements concluded in the geographic area covered by the agreement. Every agreement covered at least one EU Member State. Some settlement agreements covered more than one EU Member State or covered the EU as a whole. These agreements are reported in Figure 76 as "separate settlement agreements" by Member State. In addition, some agreements covered countries in the rest of the world excluding the USA; some covered the USA and some were global. The figure also compares the number of patent settlements covering the EU Member States and gives the value of the pharmaceutical market (sales of pharmaceutical products at ex factory prices) for each of the EU Member States. The figure shows that more settlement agreements were concluded for countries with a high pharmaceutical market value than in countries with a lower market value.

Figure 97: Number of patent settlements per EU27 Member State



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

Note: Agreements covering more than one geographic area are counted for each area. The market value figures are for sales of prescription medicines for human use, at ex-factory prices. The black line shows a linear market value trend line for the dotted line indicating the total market value. Figures for Greece, Romania, Bulgaria, Slovenia, Cyprus and Malta include sales of non-prescription medicines. Sales information for Cyprus and Malta are from EPFIA.

2.4.1.2. Companies' General Considerations and Decision Making Processes with Regard to Patent Settlements in the EU

Considerations of Companies when Entering into Patent Settlement Agreements

(589) Pharmaceutical companies in the EU see patent litigation cases as fact-intensive, legally complex, lengthy and costly. The conclusion of a settlement agreement is seen as an alternative way forward to continuing litigation until final judgment.

(590) Even though both originator companies and generic companies submitted that they apply no general policy guidelines when entering into settlement agreements, and thus decide on a case-by-case basis, it is possible to identify some key factors which are taken into consideration in the assessment of patent settlement agreements.

(591) The fundamental factor considered by originator companies when deciding whether to enter into a settlement agreement with generic companies is the strength of their position in the patent litigation (the expected likelihood of winning). When companies assess their position as strong, they do not consider entering into a settlement agreement. However, if their chances of winning are assessed less strong and there is a great deal at risk, they give careful consideration to the possibility of settling with the other party.

(592) Generic companies, on the other hand, are more concerned with the cost of litigation. Generic companies maintain that they cannot financially afford lengthy and extremely costly litigation. Patent litigation cases are considered to be resource intensive, including personnel-related costs. In addition to procedural legal costs, the likelihood of fully recovering the costs incurred plays an important role. Generic companies also try to avoid large damages claims by the patent holder (in particular if they entered "at risk"), should the court of last instance decide that the patent is valid and has been infringed. Generic companies thus consider settlement as an opportunity to reduce costs (IP and legal costs, senior management time). One generic company observed:

> *"If the costs and time of litigation in respect of the products being subject of litigation would be destructive to our current business and would not allow us to focus on other business objectives, we would rather enter into an agreement on fair terms instead of carrying out dispute or litigation."*

(593) As part of the process of determining the probability of winning or losing a patent litigation, an internal and external evaluation of a patent portfolio is often carried out. The local legal environment, parallel litigation on the same INNs, the duration of the patent protection, the scope of that protection and the position of the competitors are also taken into account. In particular, for generic companies the risk/success evaluation can often be very complex owing to a high number of patents (allegedly) protecting a product and/or the process and the confusion created as to the exact scope of the patent protection. A generic company made the following observation in this regard:

> *"Patent litigation can be so complex and technical that settlement can be of interest. We can never know the ultimate outcome when patent litigation begins, even though we may have undertaken prior IP review and evaluation. This is because the evaluation of the risk may evolve from one month to another, according to internal assessments, as well as external circumstances (developments in the case, new case law, regulations etc.)."*

(594) Originator companies also assess the chances of obtaining an interim injunction. Some originator companies – according to their submissions – settle cases in which it has been impossible to obtain an interim injunction against the generic company, whereas some generic companies stated that they had no interest in concluding a settlement if a court refused to grant an interim injunction to the originator company, since they can continue to be present on the market. An originator company commented as follows:

> *"We often settle not because we think that we had a weak case, but because it would have been impossible to obtain an interim injunction against a generic company. Thus, there is no longer any significant commercial benefit in continuing litigation, in particular after the entry of other generic companies."*

(595) The above quote also demonstrates that originator companies consider the likelihood of a second or third generic company entering the market. If they consider the likelihood as high, they prefer to settle. The issue is also of great interest to the generic company. If it is the first company on the market and there is no Court decision to the effect that a patent is invalid, the settlement might mean that, for a given period of time, it is the only generic company on the market. In any event, generic companies aim to secure the earliest possible entry date with a reasonable degree of certainty. A

settlement is thus seen as an arrangement to fix the launch dates for the products at issue. In this respect, a generic company observed:

> *"When deciding what type of settlement agreement to conclude, we aim at obtaining the earliest possible entry date with a reasonable degree of certainty, weighing the considerable risk that continuing the litigation would result in us being excluded from the market for the entire patent term."*

(596) Another factor that originator companies find especially relevant when deciding to enter into a patent settlement agreement is the importance of the product at issue in the litigation and its market size. Originator companies aim to safeguard the marketing and sales of the product under patent litigation, in particular when the product is a "blockbuster" or a product that accounts for a significant percentage of the turnover of the company concerned.

(597) The expected duration of the litigation, in combination with the expected date of loss of market exclusivity, are also important aspects that influence a company's decision to enter into a settlement. The likelihood that the litigation will continue over a very long time clearly has an impact on the parties. In general, both originator and generic companies decide to settle the pending litigation if the patent expires in the meantime.

(598) The likelihood of winning the patent litigation at issue also depends upon the evidence available (proof of validity and infringement) and on the potentially competent jurisdiction, since patent law and rights are national in nature and their application varies from one country to another. This creates opportunities for companies to choose, in the first place, in which country they will start the litigation and, at a later stage, in which country they will settle, depending on the local legal procedures, the local legislation and case-law, the quality of the court and the efficiency of the national judicial system. One originator company observed:

> *"Even with the strongest case, there is always a risk in putting a case before a court. Extraneous factors (over and above the actual strength of the case) can affect the outcome: e.g. judicial error, poor court strategy, error on the part of the company or its advisors. […] These concerns are magnified where similar issues may be raised in a number of jurisdictions, thus multiplying the uncertainty. This is currently the case in Europe, where the national nature of patent rights and of patent litigation enables a degree of "forum shopping" by a potential entrant who can (and will) choose jurisdictions which can give the best opportunity of a valuable precedent settling success."*

(599) In certain circumstances, the originator companies see settlements as structured agreements with patents remaining in force. Whenever a settlement agreement is concluded, there is no court ruling on the patent's validity or on any alleged infringement. Accordingly, the patents remain potential obstacles to further generic competition. Whilst the originator company has not yet achieved its ultimate objective of preventing generic entry until the patent(s) expire(s), it has at least been able to delay it and possibly even gain concessions from the generic company, e.g. by keeping it out of selected markets. In exchange, the originator company may pay a lump sum to the generic company or grant a licence to market its product. Such a deal is also beneficial for the generic company, if the latter is allowed to stay in a specific market,

despite the patent remaining in force (see Subsection C.2.4.1.4. on category B.II. settlements).

(600) Another important consideration seems to be whether there is existing cooperation between the parties and whether the parties have previously settled disputes and/or litigation. Settlement discussions can provide an opportunity for companies to identify areas where they can work together. For example, a generic company might have a particular expertise in formulation processes, or have a developed distribution network in territories which are of interest to the originator company, or have access to manufacturing expertise which the originator company would wish to use. If the parties are able to reach an agreement that benefits them both, then such an arrangement will be concluded. One originator company described this as follows:

> *"Despite the potentially acrimonious and adversarial nature of litigation, settlement discussion can provide an opportunity for companies to identify areas where they can work together in a commercially sensible way, taking advantage of opportunities which might not previously have been apparent."*

Decision Making Processes

(601) Depending on the size of the company, various internal decision-making processes are followed when concluding settlement agreements. For large companies these processes are more formal than for smaller and medium-sized companies. In the latter, companies' decisions related to settlements do not require formal written consent from the Board. In large international companies, settlements of patent litigation are managed centrally through the patent departments of the parent company and evaluated through their corporate offices.

(602) Some originator companies review all IPR litigation through a specific committee which also reviews patent settlement proposals and whose agreement is required before entering into any settlement. In some companies, a steering committee is created to follow up litigation and these steering committees are also in charge of engaging in settlement discussions and preparatory work on settlement agreements.

(603) In other companies, the decision-making process typically involves the local and regional management and the approval of the appropriate local board of the company under the relevant jurisdiction, not least because the subsidiaries are run as profit centres that have to decide locally on the costs of litigation. In addition, the legal, intellectual property, R&D and commercial departments are all consulted. Some companies have submitted that settlement agreements are sometimes evaluated by oral discussions and are not necessarily recorded in writing.

(604) In many cases, external advisors are consulted, including specialists advising in particular on intellectual property questions, as well as contract law and competition law (both national and EC). In local jurisdictions, patent litigation is often carried out by relying on outside legal counsel who might participate in settlement discussions.

Conclusions on Key Factors

(605) Originator and generic companies were asked to provide a prioritised list of the five most important considerations when deciding whether to enter into a patent settlement, and on what terms, with another company.[297]

(606) Based on the replies, Table 19 shows the factors which the originator companies consider as most important when deciding to enter into patent settlements and on what conditions (more than one possible answer allowed).

Table 19: Originator companies' five most important considerations for entering into patent settlement agreements

	Consideration	**Mentioned by % of originator companies who responded**
1	Strength of own company's position in the case (probability of winning or losing)	95%
2	Market size and revenue of the originator product to be protected	82%
3	Expected costs/avoided costs of litigation and impact on personnel cost	68%
4	Inherent uncertainty involved in patent litigation	68%
5	The expected duration of litigation	55%

Source: Pharmaceutical Sector Inquiry

(607) Of the respondent originator companies questioned, 95% indicated that the most important factor that they take into account when considering a patent settlement is the probability of winning or losing the patent litigation, i.e. the strength of their position in the case. The second most important factor is the size of the market in question and the revenue of their product that needs to be protected. Originator companies attach equal importance to balancing the expected costs and the litigation costs avoided (including impact on personnel resources), as well as to the inherent and substantial uncertainty involved in patent litigation. Finally, more than half of the respondent originator companies mentioned the expected duration of the litigation in question as one of the five most important factors to be considered.

(608) Generic companies that responded to the question consider the following factors as the most important when deciding whether to enter into patent settlements with an originator company and on what conditions.

[297] Some originator and generic companies indicated that they were unable to provide such a prioritised list, in abstract terms because patent litigation and patent settlements are highly subjective and the importance of factors that are taken into consideration are case-specific.

Table 20: Generic companies' five most important considerations for entering into patent settlement agreements

	Consideration	Mentioned by % of generic companies who responded
1	Expected costs/avoided costs of litigation and impact on personnel cost	75%
2	Inherent uncertainty involved in patent litigation	67%
3	Strength of the company's position in the case (probability of winning or losing)	67%
4	The country where litigation takes place	42%
5	The expected duration of litigation	42%

Source: Pharmaceutical Sector Inquiry

(609) For the vast majority of generic companies (75%), avoiding the costs related to litigation and also the impact on personnel costs (including monetary and personnel resources) are their major concerns. This is particularly the case when they receive either very limited or no revenues from the product during the court proceedings.[298] Generic companies attach equal importance to the uncertainty in patent litigation and to the likelihood of success in the patent litigation. The Member State in which the litigation takes place and also the expected duration of the litigation at issue are taken into consideration too.

2.4.1.3. Patent Settlement Agreements in the EU

(610) This section analyses the patent settlement agreements between originator companies and generic companies with relevance to any of the EU27 Member States that were concluded between January 2000 and June 2008. A patent settlement is considered relevant for the EU27 Member States even if only part of the agreement relates to one of the EU27 Member States (or parts of that Member State) and the other part of the agreement relates to countries in the rest of the world. As indicated above, originator companies and generic companies submitted at total of 207 separate patent settlement agreements in their responses to the sector inquiry's questionnaires.

(611) The agreements were categorised on the basis of two main criteria. First, they were categorised according to whether they limited the generic company's ability to market its own product in the market concerned by the settlement. Agreements limiting generic entry are categorised as B-type, whereas agreements that do not limit generic entry are categorised as A-type.

(612) Secondly, for all the agreements in which generic entry was limited – i.e. category B – an analysis was made to ascertain whether they involved any type of value transfer from the originator company to the generic company. The agreements which included

[298] This might be less true in cases where a generic company decides to launch its product "at risk" and/or to challenge in Court the patent validity, since the generic company should have calculated and internalised the risk and the associated litigation costs.

a value transfer from the originator company to the generic company are categorised as B.II, whereas agreements which do not include such a value transfer are categorised as B.I.

Box: Categorisation criteria – patent settlement agreements

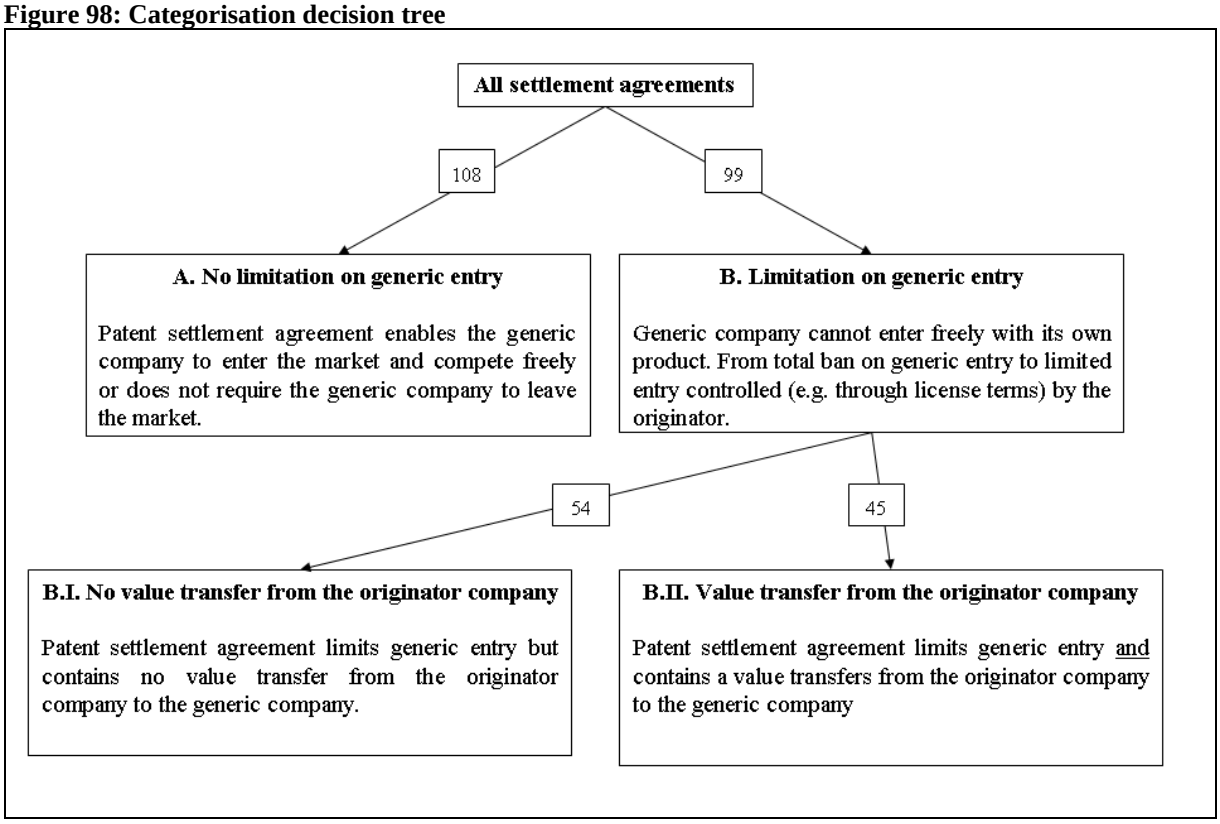
1. Limitation of Generic Entry

The generic company's entry can be limited in several ways. The clearest limitation of generic entry is when the settlement agreement contains a clause explicitly stating that the generic company recognises the validity of the originator company's patent(s) and refrains from entering the market until the patent(s) have expired. If the parties to a patent settlement agreed that the originator company should grant a licence to certain patent rights to the generic company, thereby allowing it to enter the market, the agreement was still categorised as limiting generic entry. The reason for this is that the generic company cannot enter the market with its own product unless it has an agreement with the originator company. Accordingly, the generic company's entry is partly or wholly controlled by the originator company through the terms of the concluded licence agreement. In line with the definition, the generic company is therefore unable to compete on the market – without limitations. The same is true for patent settlement agreements in which the parties agree that the generic company can become a distributor of a product of the originator company or if the generic company will source its supplies of the active ingredient from the originator company.

2. Value Transfer to the Generic Company

Value transfer to the generic company in patent settlement agreements can take different forms. The most clear-cut value transfer is a direct monetary transfer (e.g. payment of a lump sum) from the originator company to the generic company. Monetary transfer can also take the form of compensation for the generic company's legal cost(s) in the patent dispute or can be classified as the purchase of an asset, for example the stock of a product which is in the generic company's possession. Other types of value transfer include distribution agreements in which the generic company becomes a distributor of a product of the originator company or a "side-deal" in which the originator company grants a commercial benefit to the generic company, for example, by allowing it to enter the market before patent expiry in another geographical area or with another product. Furthermore, value transfer could consist in granting a patent licence to the generic company. A patent licence enables the generic company to enter a market with a product but, as explained above, the commercial freedom of the generic company is limited by the terms of the licence agreement which, for instance, can include limitations on the quantity of the types of products that the generic company may sell. A patent licence may be exclusive or non-exclusive, may be limited to the geographic area in which the patent dispute between the parties has taken place and may be granted royalty-free or royalty-bearing. The terms of the licence agreement determine the level of the value transfer to the generic company.

Figure 98: Categorisation decision tree

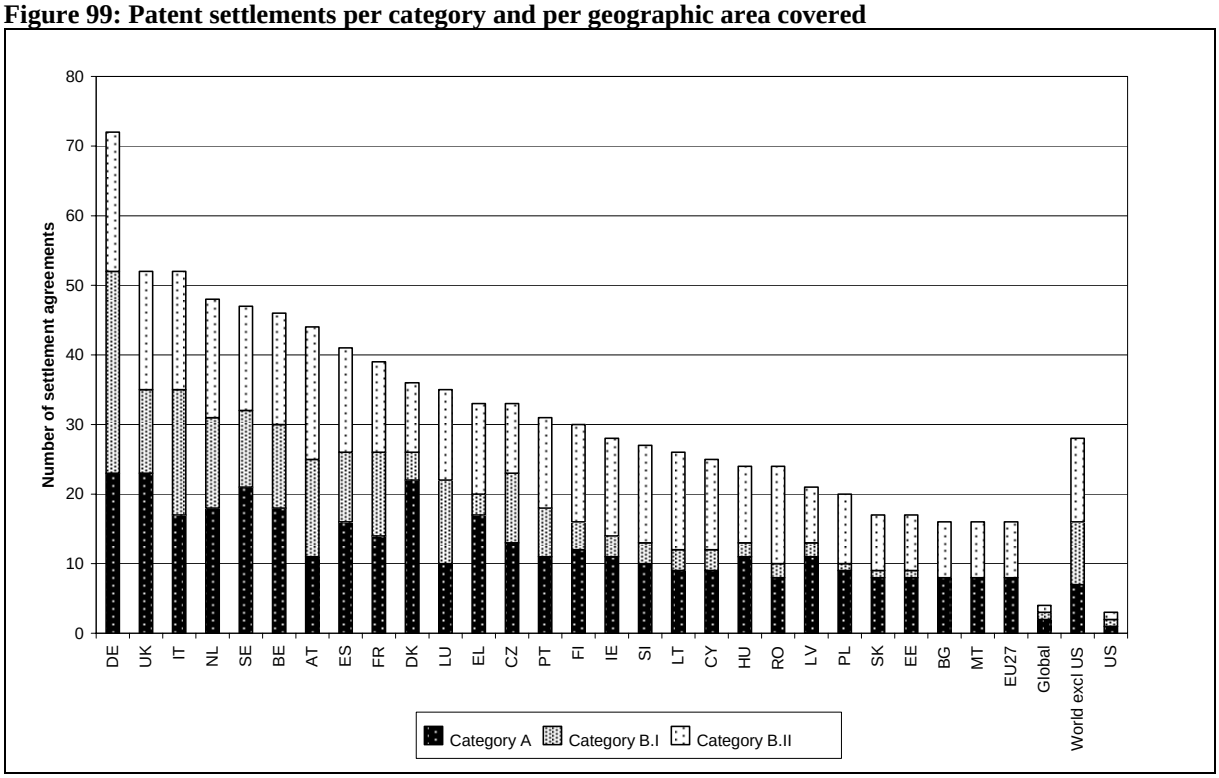


Source: Pharmaceutical Sector Inquiry

(613) A total of 108 of the 207 settlement agreements (52%) concluded in the period between January 2000 and June 2008 in at least one EU27 Member State imposed no limitation on the generic company's ability to enter and market its product. These were consequently categorised as belonging to category A. The remaining 99 agreements included a limitation on the generic company's ability to market its product. Of the 99 category B agreements, 54 agreements (55%) included no value transfer from the originator company to the generic company. They were subsequently categorised as B.I. The remaining 45 agreements (45%) limited generic entry and included a value transfer from the originator company. These were categorised as B.II.

(614) Figure 99 breaks down the number of settlements per category concluded per geographic area covered by the agreement. Compared with Figure 97, Figure 99 shows a variation in the breakdown of the three categories between Member States. Some Member States which have a large number of settlement agreements have a higher share of category A settlements – for instance Denmark, which in total is covered by 36 agreements, of which 22 (61%) are category A. At the other end of the scale, Austria was covered by 44 agreements, of which 33 (75%) were category B.

Figure 99: Patent settlements per category and per geographic area covered



Source: Pharmaceutical Sector Inquiry.

Note: Agreements covering more than one geographic area are counted for each area.

2.4.1.4. Main Categories of the Patent Settlements

(615) This section describes in detail the different types of patent settlement agreements between originator and generic companies that fall into the above three categories.

A. Agreements that did not limit the generic company's ability to market its own product (category A)

(616) As mentioned above, 108 of the total of 207 patent settlement agreements that were analysed (i.e. 52%) did not explicitly limit the generic company's entry into the market. In these agreements, the generic company was free to market its own generic product in the geographic market concerned, on a given date and under the conditions chosen by the generic company itself.

(617) Litigating parties entered into category A settlement agreements for a variety of reasons and the terms of the settlement agreements took various forms, depending on whether or not the generic company had entered the market (at risk) or whether the settlement was concluded close to the time when the originator company lost market exclusivity.

(618) Of the 108 settlement agreements in category A, the generic company that concluded the settlement was already present in the market in 69 cases (64%). In all but one of these cases another generic company was also already present in the market when the settlement was concluded. In another 20 of the 108 agreements (19%), the generic company that concluded the settlement was not present in the market but another

generic company was. Only in 11 cases (10%) no generic company was present in the market.

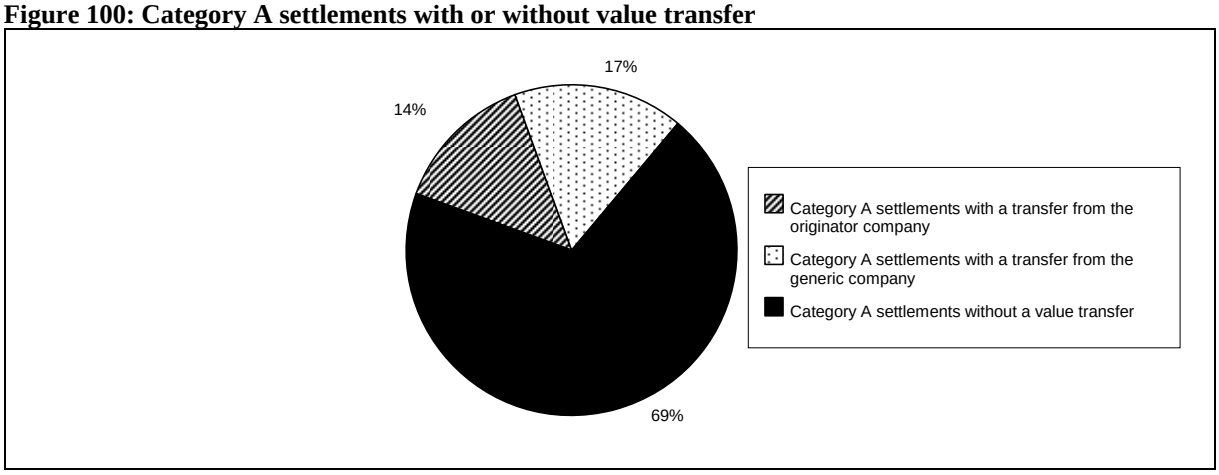
(619) Furthermore, the clear majority of category A settlement agreements were concluded after or just around the time when the originator company's product effectively lost market exclusivity. In such circumstances, the most rational course may be for companies to settle their dispute and avoid further legal costs, as the generic company would, in any event, be free to enter the market with its own product at this point.

(620) However, some of the agreements were concluded prior to the point at which the originator company's product lost exclusivity. One reason behind such agreements that was mentioned by originator companies was the originator company's inability to prove the generic company's infringement. This may have been the case either because the originator company was not granted an interim injunction or because the originator company had already lost the case in the first instance in the area concerned by the settlement or in another geographic jurisdiction. Another reason given by originator companies was that the originator company agreed to let the generic company enter the market in return for the generic company withdrawing its patent invalidity claims.

(621) In the former situation, an originator company might decide that the chances of winning an appeal or litigating on the same issue in another geographic area are so low that the costs and risks associated with the litigation outweigh the possible benefits. Therefore, it can be more beneficial for the company to settle the litigation and allow the generic company to enter the market. A settlement in this situation could also be preferable for the generic company as it would remove any further delays to market entry

(622) A clear majority (69%) of category A settlement agreements did not include a payment, but were concluded on a so-called "walk-away" basis. Such an agreement is the most likely outcome if both parties believe that continuing the litigation would be a waste of time and/or resources.

Figure 100: Category A settlements with or without value transfer



Source: Pharmaceutical Sector Inquiry.

Box: Example: Category A patent settlement agreement with no value transfer

One generic company challenged the validity of an originator company's patent in a Member State and obtained marketing authorisation. In parallel, another generic company filed a non-infringement action claiming that its product was not infringing any of the originator company's patent(s). The originator company filed counteractions against both generic companies and applied for interim injunctions, which were refused by the court.

Following the refusal by the court to issue an interim injunction, the parties decided to settle the litigation. The originator company withdrew its counteractions and undertook not to initiate patent infringement actions in the future against the two generic companies in the geographic area concerned. In return, the generic companies agreed to discontinue their litigation claims. The result of the patent settlement was that the generic companies were free to enter the market with their own product.

(623) However, some of the category A settlements included a value transfer from the originator company to the generic company. One example was the case in which an originator company was first granted an interim injunction against a generic company's product but later lost the main infringement case. Under such circumstances, the generic company could claim damages for lost sales it incurred whilst it was prevented from marketing its product.

(624) Another example very similar to the one above is the case of a generic company which was planning to enter a market and faced an infringement claim by an originator company, although the Court later declared the patent invalid or not infringed. The possible outcomes of such situations are identical to those described above, apart from the fact that the generic company, rather than being ordered by an interim injunction to exit the market, was actually stopped from entering the market.

Box: Example: Category A settlement with a payment from the originator company to the generic company and agreed early generic entry in another territory

The parties were involved in patent litigation in a Member State. The originator company's request for an interim injunction was initially upheld by the court, but its formulation patent was later declared invalid. The parties decided to discontinue the litigation and settle. As a result of the settlement, the generic company was able to enter the market and, in addition, received a lump sum as compensation for loss of sales incurred during the period covered by the interim injunction. Furthermore, the originator company agreed that the generic company could launch an authorised generic product in another country (outside the EU), in which the patent had not yet expired. Ultimately, the generic company became the exclusive partner of the originator company in that country.

(625) Some of the cases where the originator company's patent(s) expired before a final judgment was reached, also included a value transfer from the generic company to the originator company if – in the assessment of the parties – the patent was valid, but the generic company had entered at risk. Such compensation covered legal fees and damages. However, in such a case the settlement agreement could also provide for a payment from the originator company if the generic company had a good chance of proving that it was wrongfully kept out of the market.

Box: Example: Category A settlement, with a payment from the generic company to the originator company

After lengthy litigation (lasting more then ten years) in a Member State without any final result, the parties decided to settle the litigation because the originator company's patent, at issue in the litigation, had expired.

As part of the settlement agreement, the generic company accepted that it had infringed the originator company's patent and agreed to pay damages to the originator company. By concluding the settlement, both parties mutually relinquished their claims/counterclaims for the past and future concerning the patent in-suit and the generic company was free to market its product in the Member State concerned.

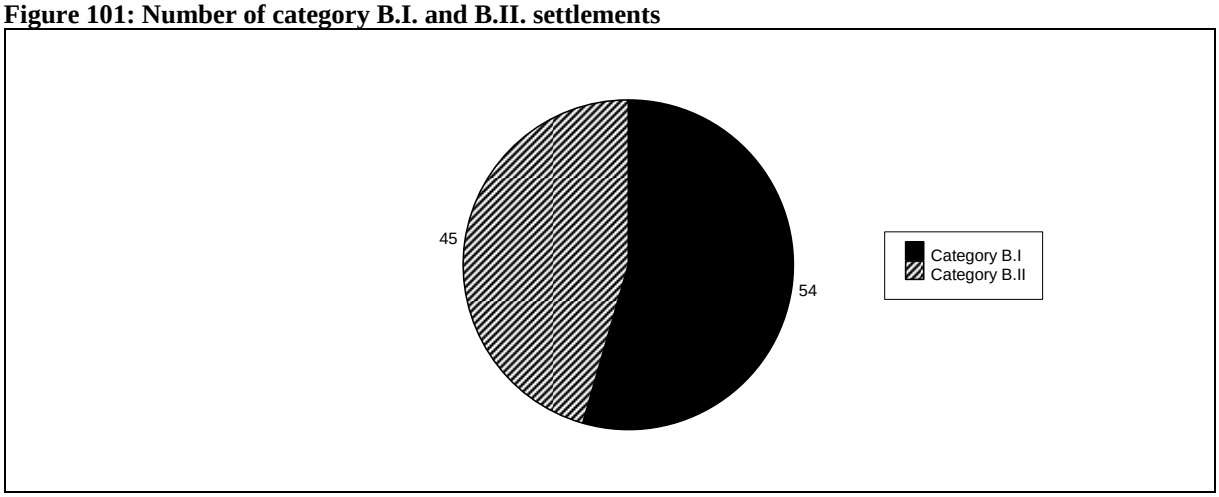
(626) The sector inquiry confirmed that in 15 category A settlements (14%), the originator company made a value transfer to the generic company. In total, more than € 20 million was transferred from originator to generic companies. In one agreement, the value transfer flowed to the generic company in the form of a "side-deal" involving elements not directly related to the resolution of the patent litigation. In this "side-deal", the generic company obtained a licence to market another product not subject to the patent litigation.

(627) In 18 category A settlements (17%) the originator company received a value transfer from the generic company as compensation for damages. However, the total value transferred from the generic companies amounted to only to € 2.5 million.

B. Agreements that limited the generic company's ability to market its own product (category B)

(628) A total of 99 of the patent settlement agreements submitted (48%) included an explicit limitation on the generic company's ability to market its own product. As explained above, the generic company's entry can be limited in several ways. Some settlement agreements provided that the generic company would recognise the validity of the originator company's patent(s) and would refrain from entering the market until the relevant patents had expired. In other cases, the generic company agreed either not to enter or to withdraw its generic product and, in exchange, obtained a licence to exploit the patent or became the originator company's distributor and was thus able to market the originator company's product. The latter cases are still categorised as limiting generic entry, since – although the generic company can enter the market – it can do so only under the conditions of the licence agreement concluded with the patent holder.

Figure 101: Number of category B.I. and B.II. settlements



Source: Pharmaceutical Sector Inquiry

B.I. Agreements that limited the generic company's ability to market its own product but included no value transfer to the generic company (category B.I.)

(629) Some 54 patent settlement agreements (26%) included an explicit limitation of the entry to market by the generic company, but no value transfer to the generic company. In these agreements, the generic company agreed to enter only after the patent(s) at issue had expired. The background to category B.I. settlements and the terms of the settlement agreements can take various forms. However, the main characteristic of this category of settlement agreements seems to be that the originator company had won the patent infringement case against the generic company, at least before the court of first instance. Further to this, the generic company recognised the full validity of the patent and agreed not to market its product until after expiry of the relevant patent.

(630) In almost all category B.I. settlement agreements, the validity of the originator company's patent and the patent infringement by the generic company were recognised by a court decision prohibiting the latter from marketing its generic product until after patent expiry. In some cases, the court ordered the generic company to pay damages to the originator company for having infringed the originator company's patent. The generic company had an interest in settling the case, very often before the final court ruling that established the costs/damages to be paid. Further to this, the generic company undertook to accept the court ruling(s) as final, rather than appealing against them. At the same time, it recognised the validity of the originator company's patent(s) and/or agreed not to challenge its/their validity in the future. It also undertook either not to enter the market or to stop marketing its own product until after the expiry of the patent(s) concerned.

Box: Example: Category B.I. settlement with a payment from the generic company

An originator company's request for an interim injunction against a generic company in two Member States was upheld by the courts. The parties decided to settle and accepted the interim injunctions as being the final outcome of the patent litigation. The originator company undertook not to pursue claims for damages against the generic company for marketing its product in the two Member States. The generic company furthermore withdrew its product and agreed to pay the originator company's legal costs.

Box: Example: Category B.I. settlement with delayed entry and a payment from the generic company to the originator company

An originator company obtained several interim injunctions on the basis of an SPC, under which the generic company was prohibited from importing and marketing its generic product in a Member State until after expiry of the patent concerned. In addition, all the generic products were put into temporary custody until the final ruling. The originator company requested penalties and fines, while the generic company filed a nullity action against the patent.

The parties decided to settle. The generic company accepted the interim injunctions as final and withdrew its nullity action against the originator company's patent. Moreover, it agreed to pay to the originator company a lump sum for legal fees and communicated to the originator company the exact quantities of the generic product sold in the Member State before the settlement. The originator company waived its rights against the generic company under the patent proceedings in the Member State concerned and undertook to file no further interim injunctions, no further infringement actions and no claims for damages. The originator company furthermore withdrew claims for criminal prosecution.

(631) The total value transfer from generic companies to originator companies amounted to a little over € 7 million (disregarding the value attributable to the destruction of the generic products).[299]

B.II. Agreements that limited the generic company's ability to market its own product and included a value transfer to the generic company (category B.II.)

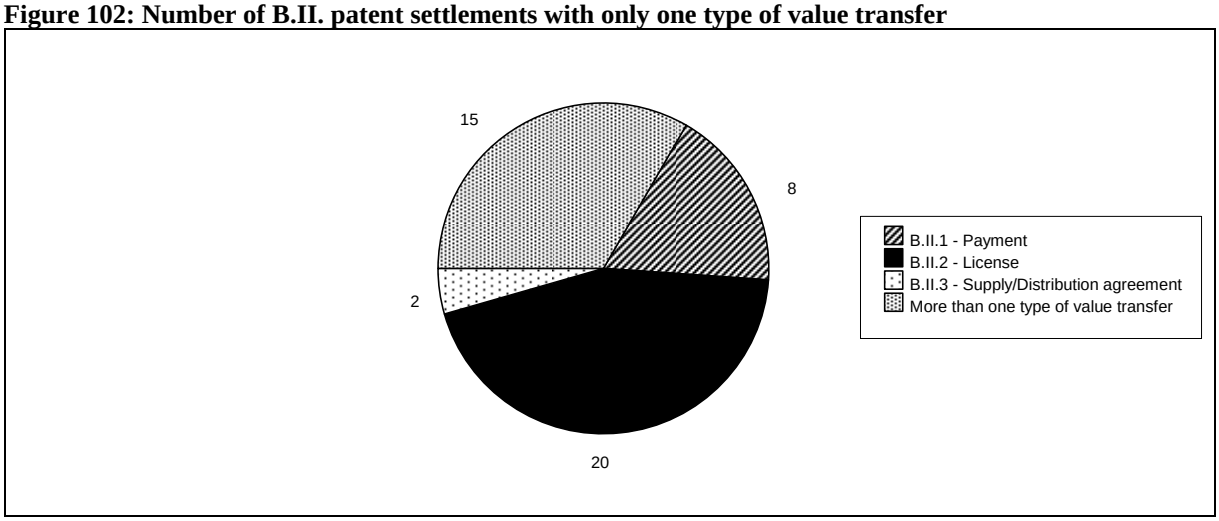
(632) Of the total number of 207 agreements, 45 patent settlement agreements limited the generic company's ability to market its own product and included a value transfer from the originator company.

(633) The value transfer flowing to generic companies in the settlement agreements took different forms, and 15 agreements included several types of value transfer. As far as

[299] The total value is calculated in the basis of the responses received from the originator companies.

the 30 agreements that included only one type of value transfer were concerned, eight of them included a payment from the originator company to the generic company, 20 included the granting of a licence to the generic company, and two agreements included a supply and/or distribution agreement with the generic company (see Figure 102).

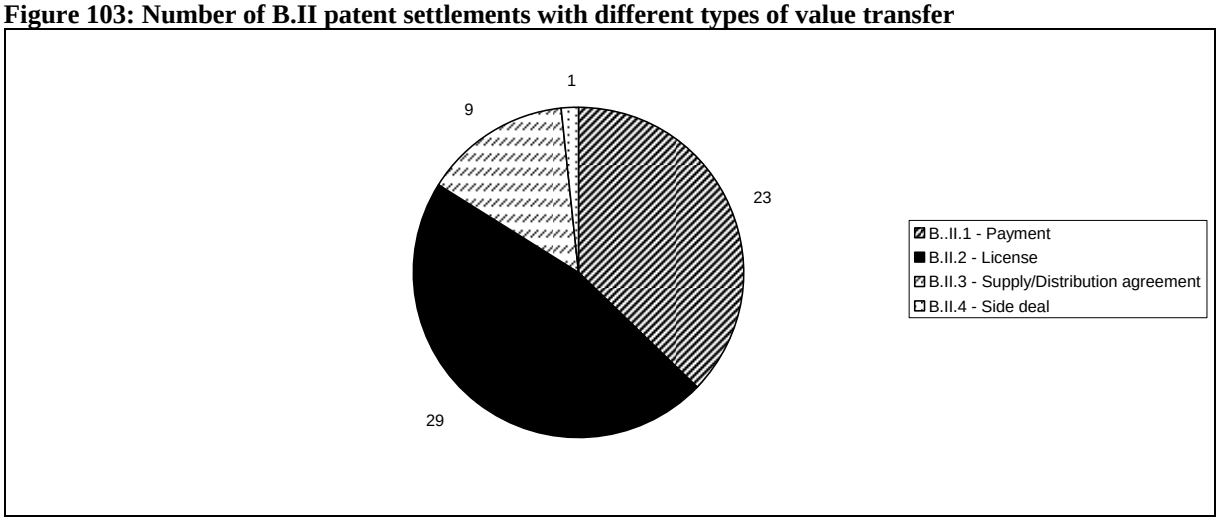
Figure 102: Number of B.II. patent settlements with only one type of value transfer



Source: Pharmaceutical Sector Inquiry

(634) Taking all B.II. agreements into account, 23 agreements (51%) included a payment from the originator company to the generic company, 29 settlements (64%) included a licence, nine cases (20%) included a supply and/or distribution agreement and one settlement agreement (2%) included a 'side deal' with the generic company (see Figure 103).

Figure 103: Number of B.II patent settlements with different types of value transfer



Source: Pharmaceutical Sector Inquiry

Note: Settlement agreements including more than one type of value transfer are counted in each category.

(635) The settlement agreements which included a direct payment from the originator company to the generic company took various forms. In six agreements, the generic company agreed not to enter the market until the court had given its judgment on the issue of patent infringement. One of these settlement agreements also included a

distribution agreement in which the generic company would be able to sell limited quantities of the product at issue in the litigation in one Member State.

Box: Example: Category B.II. settlement with payment from the originator company

A generic company was on the verge of selling a generic product in a Member State without the originator company's consent. The latter filed a request for an interim injunction and began patent infringement litigation. The parties decided to settle. The generic company agreed not to market its generic product in the Member State concerned until the court had passed judgment in the patent infringement case. It also transferred the stock of its product to the originator company. In exchange, the originator company paid a lump sum to the generic company.

(636) In the remaining 17 settlement agreements which included a payment from an originator to a generic company, the generic company agreed either to exit, or not to enter the market until after the originator company's patent(s) had expired. Nine of these agreements were combined with licensing agreements between the parties (royalty-bearing or royalty-free), allowing the generic company to sell or produce certain quantities of its product in a limited territory. Other four settlement agreements were linked to a supply or a distribution agreement making the generic company a distributor (or sub-distributor) of limited quantities of the originator company's product in certain geographic areas. One of these agreements included a clause guaranteeing the generic company's net profit in connection with the sales. Other agreements included a marketing contribution paid by the originator company and/or a payment to the generic company compensating it for its legal costs, while some agreements mention the originator company buying the generic company's stock of the product it had intended to market.

Box: Example: Category B.II. settlement with purchase of stock of products, payment and distribution agreement

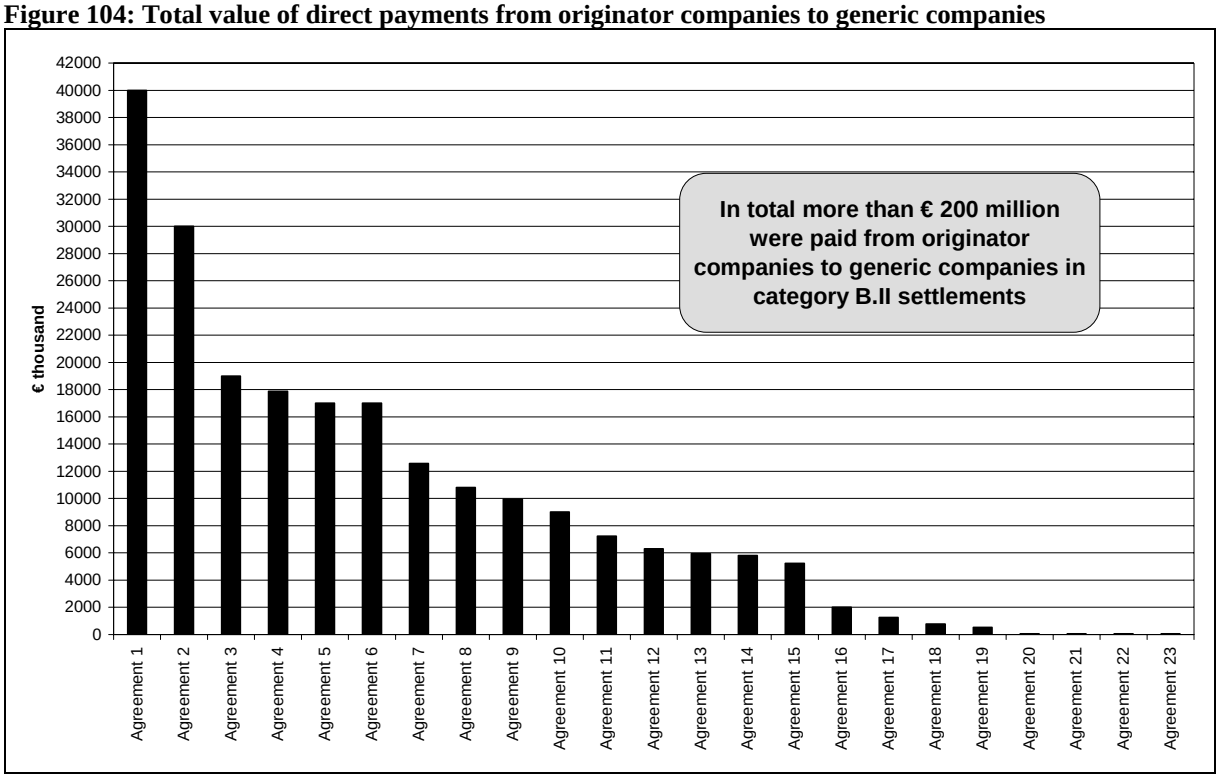
Further to an interim injunction, a generic company was prevented from launching its generic product in the Member State concerned. However, after a judgment that was unfavourable to the originator company in the patent litigation, the originator company was ordered to pay the loss of profits due to the other party for the period when the injunction was in place. The parties decided to settle in order to avoid excessive costs and time-consuming litigation (particularly in view of the number of expert witnesses that were required in order to determine the potential lost profits due to the generic company).

Further to the settlement, and besides ceasing litigation, the originator company agreed to buy the generic company's stock of products at a price fixed in the agreement, to pay a lump sum as a marketing allowance and to pay 50 % of the legal costs incurred by the generic company in the litigation.

The generic company agreed to enter into a sub-distribution agreement with the originator company's exclusive distributor in the Member State concerned with an exclusive purchase obligation, thereby agreeing not to sell any active substance from another source for the duration of the agreement.

(637) In total more than € 200 million was transferred from originator companies to generic companies in the 23 settlement agreements which included a direct payment from the originator company. It should be noted, however, that the net transfer does not take into account the value of royalty-free licences to generic companies, or the possible value transfers from generic companies to originator companies.

Figure 104: Total value of direct payments from originator companies to generic companies



Source: Pharmaceutical Sector Inquiry

Note: Value in € was calculated using historic exchange rates from the date on which the settlement agreement was signed.

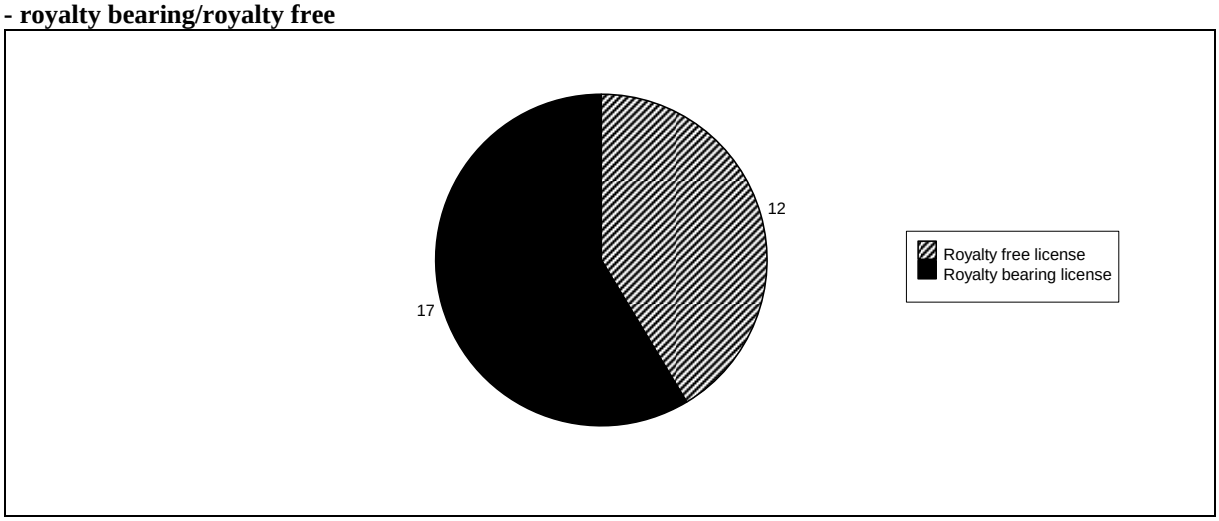
(638) Apart from the settlement agreements which included both a payment from the originator company and a licence, another 20 agreements included the granting of a licence to the generic company.[300] In the majority of the agreements, the parties agreed to withdraw all litigation, waive all claims, undertake not to initiate new litigation concerning the same subject matter in the future in return for the originator company granting a licence to the generic company.

(639) In all the agreements in which the originator company granted a licence to the generic company (29 cases), the licence was limited in scope; moreover, in the majority of cases, the licence only covered certain versions or dosages of the originator company's product. In the majority (59%) of the licence agreements, the generic company paid royalties to the originator company (see Figure 105). These agreements therefore included a value transfer to both parties. In the remaining 12 agreements (41%), the

300 In total, 29 of the B.II. settlement agreements included a licence agreement.

licence was granted royalty-free to the generic company and the generic company was the only recipient of a value transfer.

Figure 105: Number of settlements where the originator company licensed an IPR to the generic company - royalty bearing/royalty free



Source: Pharmaceutical Sector Inquiry

Box: Example: Category B.II. settlement with a royalty-free licence

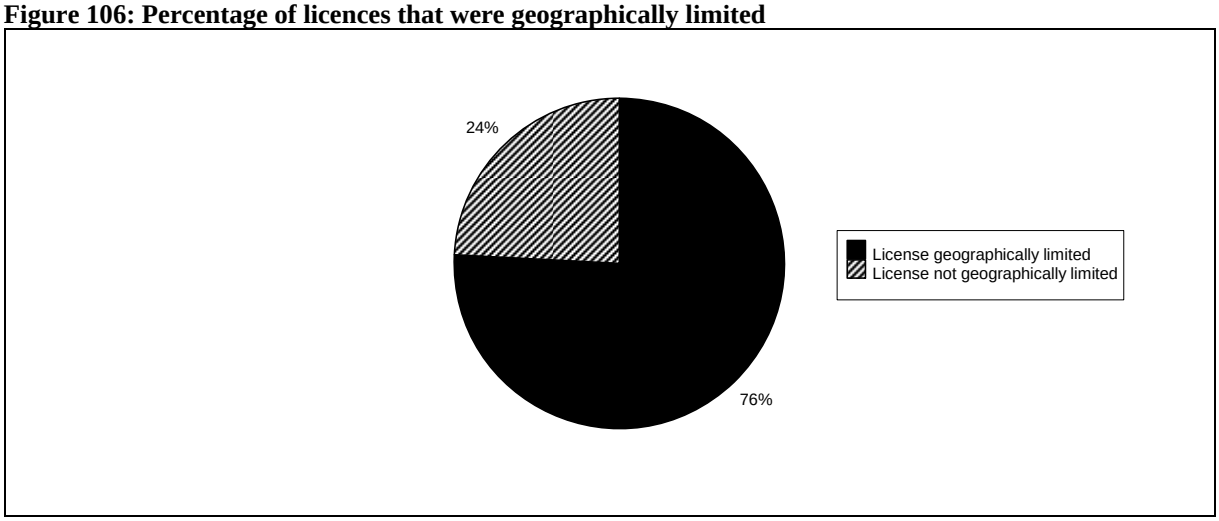
In addition to a settlement agreement between the parties covering non-EU countries, the generic company agreed to withdraw its actions for non-infringement and annulment of the originator company's patents in several Member States. The generic company also agreed not to market the product at issue, directly or indirectly, in any of these countries until an agreed date. After the agreed date, the generic company obtained a non-exclusive, royalty-free licence to manufacture/market its products in the Member States concerned.

Box: Example: Category B.II. settlement with a royalty-bearing licence

The generic company was on the verge of launching its generic product in several Member States without the originator company's consent. The latter, instead of litigating, decided to grant a non-exclusive, royalty-bearing licence to the generic company to market/import the product in the territory concerned.

(640) Three quarters of the settlement agreements including a licence agreement were limited in geographical scope (see Figure 106). Usually, the licences granted by the originator company only covered the geographic areas (fully or only partially) in which the two parties had been involved in litigation. Seven of these settlement agreements were not limited to a certain geographic area but granted a licence to the generic company for all the countries in which the originator company held the patent(s).

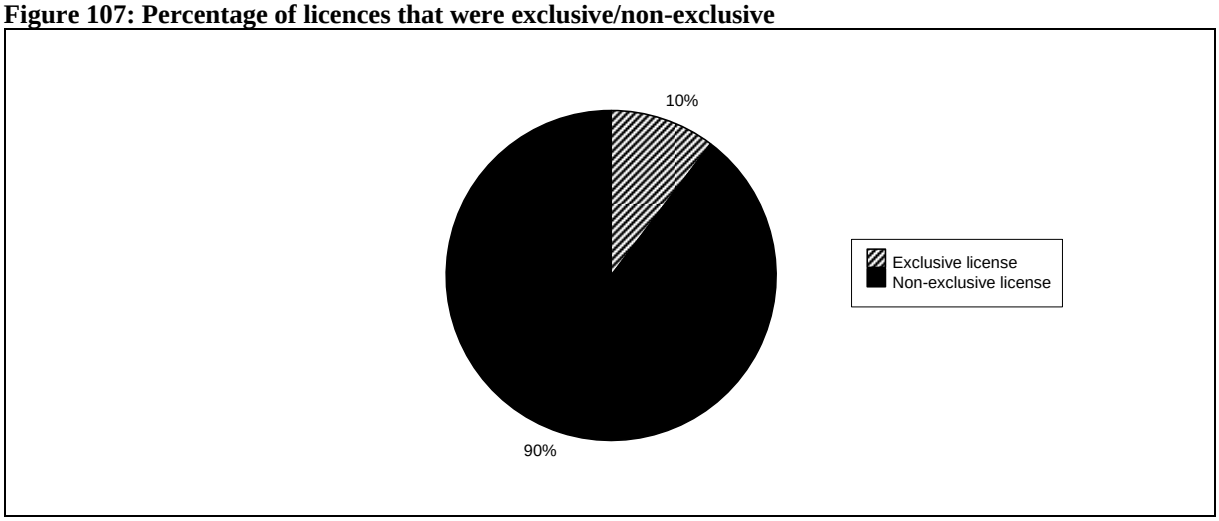
Figure 106: Percentage of licences that were geographically limited



Source: Pharmaceutical Sector Inquiry

(641) A total of 26 of the 29 (90%) licences granted by the originator company in combination with a settlement agreement were non-exclusive (see Figure 107). In those agreements, the originator company thus maintained its rights to grant licences to other parties. In three settlement agreements the originator company granted an exclusive licence to the generic company. However, in all of these agreements, the exclusivity was territorially limited.

Figure 107: Percentage of licences that were exclusive/non-exclusive



Source: Pharmaceutical Sector Inquiry

(642) In nine of the B.II. settlement agreements the parties signed a supply and/or distribution agreement enabling the generic company to enter the market with one of the originator company's own products in a generic form. In some of these agreements, the originator company undertook to supply the generic company with the finished product (either itself or through a third party), whereas in other agreements the generic company was due to receive only the API (active pharmaceutical ingredient) from the originator company. In seven of these agreements the settlement agreement also included another form of value transfer to the generic company whereas in two instances it was the only value transferred to the generic company.

Box: Example: Category B.II. settlement with payment to the generic company and supply agreement

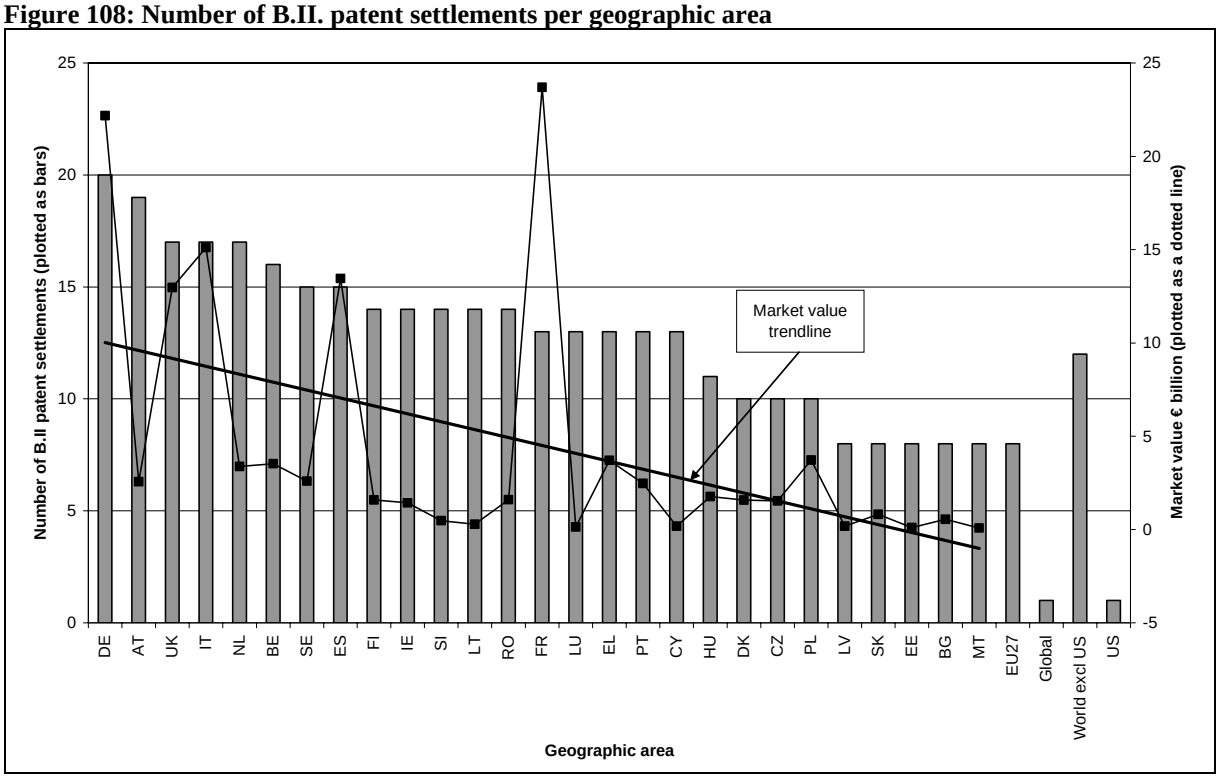
Generic company A, with which the settlement was reached, distributed generic products delivered from another generic company B in several EU Member States. The originator company sent a warning letter to company A claiming that the generic company's activities infringed its patent(s).

The parties decided to settle. Generic company A agreed to stop marketing the generic products subject to the payment of a lump sum by the originator company. Furthermore, generic company A agreed to use its influence on generic company B to stop it supplying generic products in several Member States during the term of settlement. In exchange, the originator company undertook to initiate no patent infringement action against generic company A and recognised this as full and final settlement for all its claims in the EEA. Furthermore, the parties signed a supply agreement under which the originator company would supply generic company A with the products.

(643) Only one of the B.II settlement agreements included a 'side deal' – in the sense that it involved elements not directly related to the patent issue at stake – as value transfer to the generic company. In this settlement, the parties agreed to expand an existing clinical supply and development relationship, in order to include a potential API supply arrangement in respect of a product which was not subject to the patent litigation between the companies.

(644) As was the case for the total number of patent settlements, a similar result emerges for the number of category B.II settlements covering various geographic areas (see Figure 108). Again, a correlation between the size of the market and the number of settlements is observed. The major difference here is that there are not substantially more B.II. agreements covering Germany and that France – which has the highest value sales of pharmaceutical products – dropped a few places in the ranking. Moreover, eight of the countries most covered by settlements are still found in the top ten when it comes to the conclusion of B.II. settlements, with Denmark being the only other country to drop down the list. Consequently, as was the case with the total number of settlement agreements concluded, there are more B.II. settlement agreements covering the most valuable geographic markets in the EU.

Figure 108: Number of B.II. patent settlements per geographic area



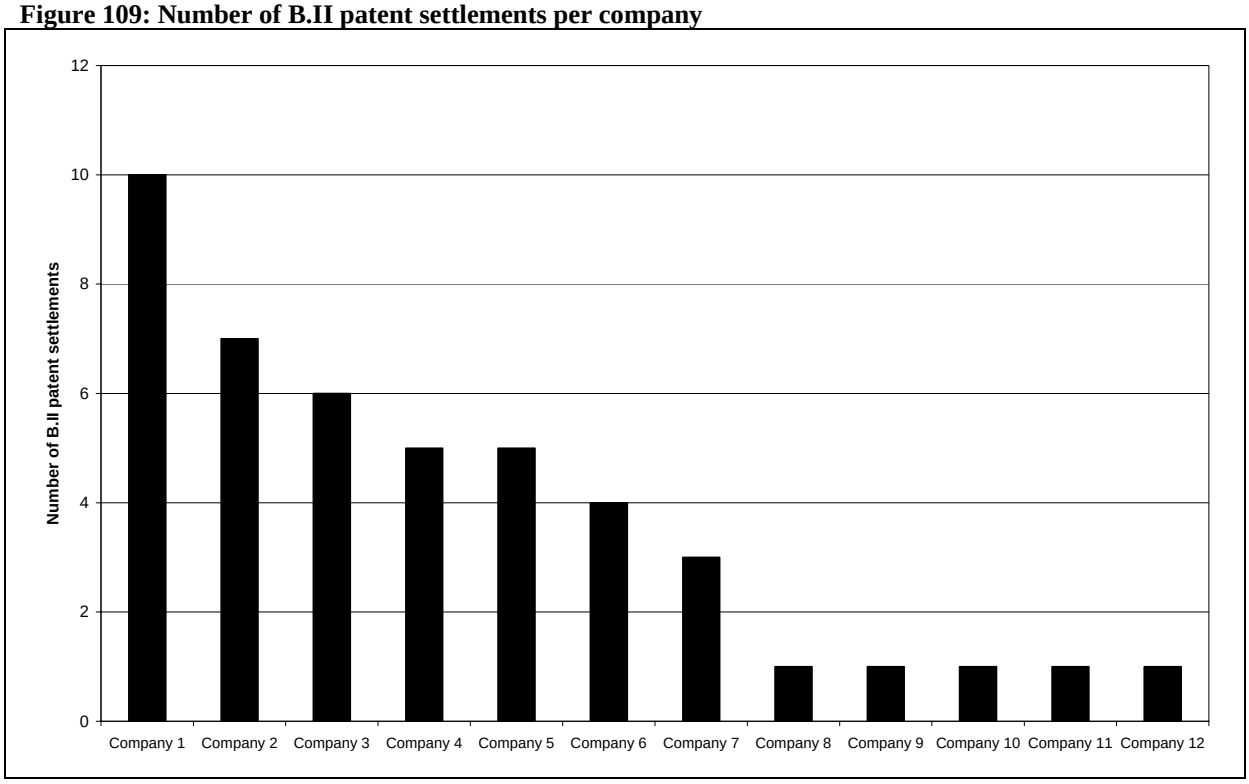
Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

Note: Agreements covering more than one geographic area are counted for each area. The market value figures are for sales of prescription medicines for human use, at ex-factory prices. The black line shows a linear market value trend line for the dotted line indicating the total market value. Figures for Greece, Romania, Bulgaria, Slovenia, Cyprus and Malta include sales of non-prescription medicines. Sales data for Cyprus and Malta are from EPFIA.

(645) The 45 B.II. settlement agreements were concluded by 12 originator companies of which only 5 concluded one B.II. settlement agreement each. The two companies with the highest number of B.II. settlements concluded agreements in ten and seven cases respectively (see Figure 109).

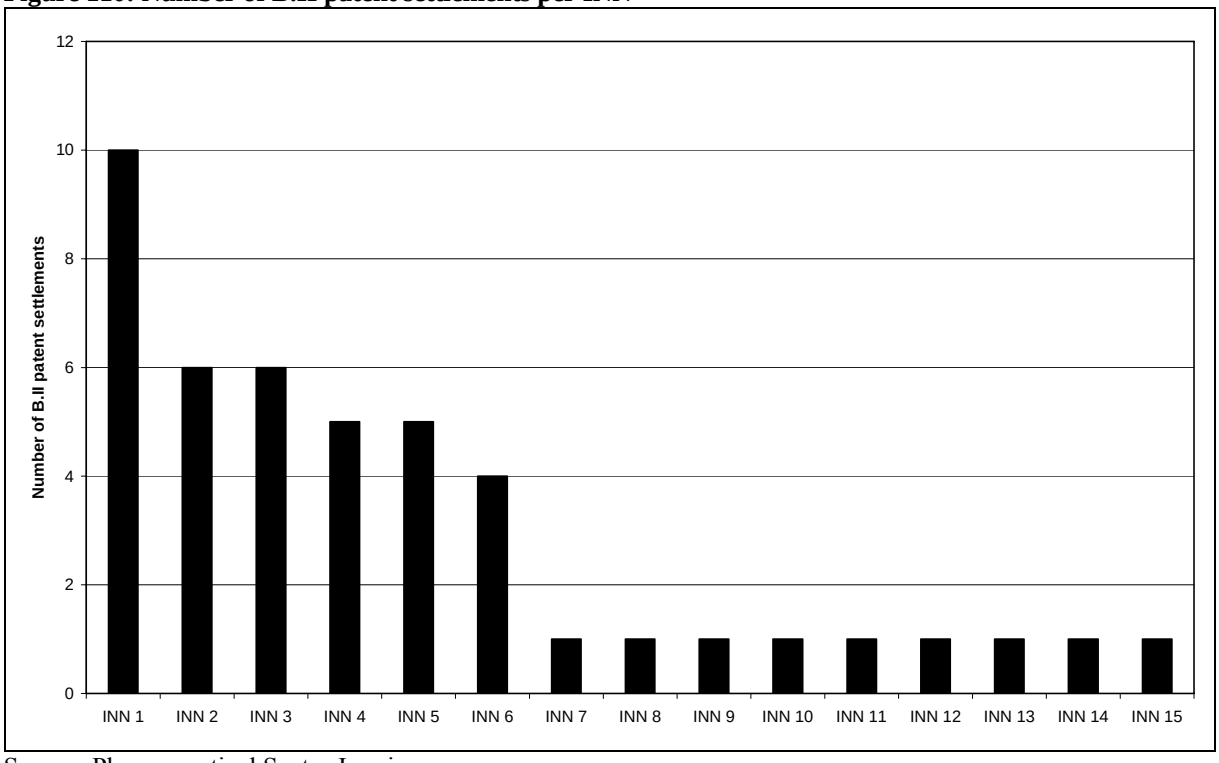
(646) In total, the 45 B.II. settlements were concluded for 15 different INNs (see Figure 110). For nine of the INNs, only one B.II. settlement was concluded, while for the three INNs with the most B.II. settlements, ten and, in two cases, six settlements were concluded. Some 12 of the 15 INNs (80%) for which B.II. settlements were concluded, were in the initial selection of INNs, which the Commission's services made in the preliminary phase of the sector inquiry.

Figure 109: Number of B.II patent settlements per company



Source: Pharmaceutical Sector Inquiry

Figure 110: Number of B.II patent settlements per INN



Source: Pharmaceutical Sector Inquiry

2.4.1.5. Patent Settlement Agreements in the USA

(647) In the initial phase of the sector inquiry it was submitted that there were significant differences between patent settlement practice in the pharmaceutical sectors of the USA and the EU. This was alleged to be essentially due to the differences in the regulatory environments, which were said to encourage generic companies active in the USA to be the first challenger of a patent-protected product.[301] By contrast, such incentives would not exist in the EU. Accordingly, the enforcement practice of the Federal Trade Commission (FTC) was deemed not to be transferable to the EU.

(648) For the purposes of this report, it was therefore considered useful to provide an overview of USA settlement practice and to identify the common factors and the differences between the EU and USA systems. This section will first describe the USA enforcement practice on settlements, as evidenced by the recent Cephalon case, but also by important USA Court rulings. A comparison will then be made between the patent settlement agreements concluded in the USA and in the EU during the past four years.

(649) As was indicated at the outset of this Chapter C.2.4.1., its purpose is not to provide any guidance on the compatibility of settlement agreements with EC competition law. It would therefore not be appropriate to conclude that the USA enforcement practice – presented in this report – is automatically and fully transposable to the EU.

Enforcement Practice in the USA – In Particular by the FTC

(650) Since 2004, pharmaceutical companies have been required to file certain settlement agreements with the Federal Trade Commission (FTC) and the Department of Justice (DoJ) within ten days of execution.[302] Each year the FTC publishes a report summarising the number and types of agreements received during the previous fiscal year. Reports have been published since 2004, the most recent relating to 2007. The latest FTC report[303] covers 45 settlement agreements which were notified to the FTC for the fiscal year 2007.

(651) According to the FTC, "the [2007] report confirms that settlements with potentially anticompetitive arrangements continue to be prevalent".[304] This has encouraged the FTC to go ahead with its enforcement action in the area of patent settlements, as shown by the recent Cephalon case. This case is the latest decision in a long-lasting enforcement record.

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301 For an overview of the US regulatory framework, see Annex: US regulatory environment (Annexes to Chapter C).

302 For the sake of clarity, it has to be noted that no such reporting obligations exist in the EU.

303 See http://www.ftc.gov

304 See http://www.ftc.gov/opa/2008/05/drug.shtm

Box: USA *Cephalon* case

In February 2008, the FTC sued Cephalon over its agreements with four generic companies for the narcolepsy medicine, Provigil (mondafinil) which included exclusion payments. Cephalon entered into agreements with all four generic companies that planned to sell a generic version of Provigil. Each of these companies had challenged the only remaining patent protecting Provigil against generic entry. The FTC claimed that Cephalon was able to induce each of the generic companies to abandon its patent challenge and to refrain from selling a generic version of Provigil until 2012 by agreeing to pay the companies a total amount in excess of US$ 200 million.

According to the FTC, "Cephalon prevented competition to Provigil by agreeing to share its future monopoly profits with generic companies poised to enter the market, in exchange for delayed generic entry. Such conduct is at the core of what the antitrust laws proscribe."

(652) The general policy line of the FTC is that payments made by the originator company to the generic company are unlawful if they are combined with a restriction on the generic company from entering the market with its own product. The FTC submitted in this respect that "where a patent holder makes a payment to a challenger to induce it to agree to a later entry than when it would otherwise enter, consumers are harmed – either because a settlement with an earlier entry date might have been reached or because continuation of the litigation without settlement would yield a greater prospect of competition."

(653) The USA DoJ supports the general view that patent settlements can amount to a violation of USA antitrust law. However, it stated that the mere presence of a payment from the originator company to the generic company is not sufficient to establish that the settlement is unlawful. For the DoJ, the appropriate legal standard is "the likelihood of success of the parties' patent claims, viewed ex ante."[305]

(654) Taking into account the fact that the substantive standard for assessing the validity of settlement agreements is not spelled out in law, the discussions on the compatibility of patent settlements have also reached the judiciary. The judiciary has not taken a uniform line, but the 11th Circuit Court in particular has taken the opposite view to that FTC, as shown by the Schering Plough case:

[305] See case FTC v. Schering-Plough Corp. – described below.

Box: *Schering-Plough Corp. v. FTC*[306] *– Eleventh Circuit Court*

Schering-Plough was the patent holder for the medicine K-DUR 20. When two generic companies (Upsher and ESI) filed applications for marketing authorisation, Schering sued them for patent infringement. Subsequently, Schering-Plough settled the patent litigation with both generic companies. Both generic companies agreed not to market their generic products until specified dates in exchange for payment of US$ 60 million to the first generic company and US$ 15 million to the second. Furthermore, Schering-Plough agreed to licence five of Upsher's products.

The FTC held that these arrangements were anticompetitive under the rule of reason. Schering-Plough and Upsher appealed the FTC decision to the 11th Circuit. The court first observed that the patent enjoyed a statutory resumption of validity. Further, under the agreement both generic companies were able to market a generic product 5 and 2 years respectively before the expiry of the patent. The 11th Circuit concluded that the licences granted by the generic company to Schering-Plough constituted adequate consideration for the payments made by Schering-Plough, rather than pay-offs to delay the introduction of generic competition.

(655) It remains to be seen how the courts will react to the latest decision of the FTC in the Cephalon case.

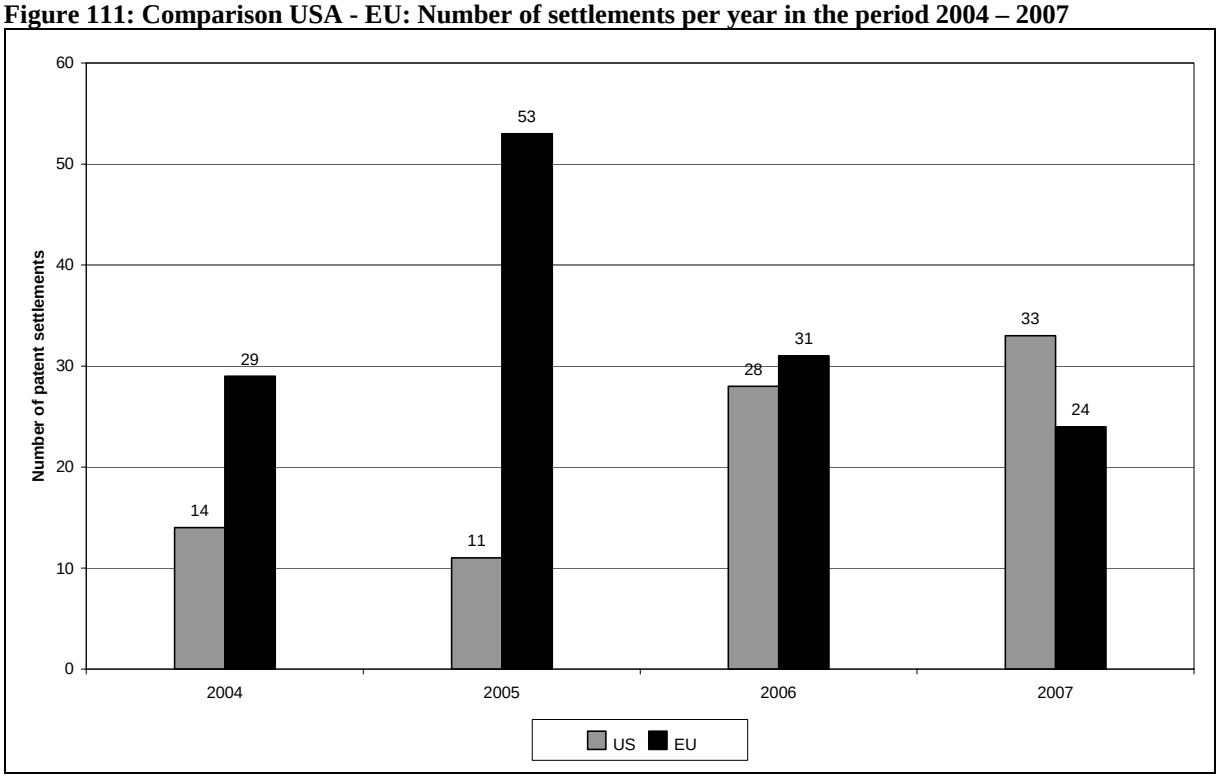
General Comparison of EU and USA Settlement Agreements

(656) Quite apart from the enforcement practice by the USA authorities and courts, it would seem useful to compare the settlement practice in the EU and the USA. Figure 111 provides an overview of the general patent settlement practice in the USA and the EU in the years 2004 – 2007.

(657) Figure 111 shows that, for the years 2004 and 2005, there were substantially more settlement agreements for the EU than for the USA. In 2006, the number of settlements was almost the same for the EU and USA, and in 2007 more settlement agreements were concluded in the USA than in EU. As a general trend it can be observed that in the USA the number of settlement seems to be increasing slowly, whereas in the EU the number of patent settlement agreements seems to be relatively stable. The only exception in the EU is – as mentioned above – the year 2005, when a significantly higher number of settlement agreements (compared to the previous and subsequent years) were concluded – 53 in total. The reason for this was that a significant number of settlement agreements were concluded for two particular INNs, as shown in Figure 95.

306 402 F.3d 1056 (11th Cir. 2005).

Figure 111: Comparison USA - EU: Number of settlements per year in the period 2004 – 2007



Source: Pharmaceutical Sector Inquiry, FTC annual reports on settlement agreements

(658) The sector inquiry also confirmed that the underlying reasons to be considered when entering into a settlement agreement appear to be the same. On both sides of the Atlantic, companies have an interest in avoiding or ending litigation/disputes and there are various commercial criteria which are taken into account, such as: (1) the costs associated with the litigation, which is an issue of particular concern for generic companies; and (2) the prospects of winning the case, which are of particular importance for originators, especially if the market value of the product concerned is high.

(659) Whilst one can thus observe a significant number of similarities between settlement agreements in the EU and in the USA, there are also some differences, resulting partly from the different regulatory regimes. For example, in the USA, the first generic company to file a paragraph-IV certification[307] is explicitly rewarded by the legislator, while in the EU the first to market enjoys no statutory period during which he is protected against market entry of a second, third or subsequent generic company. However, the first generic company also benefits from being the first entrant.

(660) Another difference observed concerns the types of value transfer.[308] As confirmed by the FTC report, one of the most important forms of value transfer in the recent USA

307 See Annex: US regulatory environment (Annexes to Chapter C).

308 Please note that the categorisation of settlement agreements used in this chapter is not necessarily the same as the one used by the FTC.

settlement agreements appears to be the originator company's promise not to launch or sponsor an authorised generic for a given period of time after the entry of the generic company's product. This type of value transfer was not found in any of the settlement agreements concluded in the EU. In this regard, the FTC submits that the nature of USA settlements has evolved a trend which does not seem to have arrived in the EU. Furthermore, an offer by the originator company of a 'side-deal' on another product(s) appears to be a normal type of value transfer in USA settlements, whereas on the basis of the material available, 'side-deals' do not appear to be a widespread form of value transfer in EU settlements.

(661) Overall, however, it seems legitimate to conclude that there are more similarities than differences between the two systems.

2.4.2. Other Agreements between Originator and Generic Companies

(662) The aim of this chapter is to describe the other agreements (besides patent settlements) relating to the sale or distribution of a generic product that were concluded in the EU by originator and generic companies during the period 2000 – 2007. More specifically, the chapter will provide a general overview of the extent to which such agreements exist, explain the different categories and present the general considerations for companies entering into such agreements, especially when this involves agreements leading to the launch of a generic product prior to the time when the originator company's product lost exclusivity. The purpose of this section is to complete the picture of the competitive environment between originator companies and generic companies, highlighting agreements for the launch of an "own" generic product in particular.

(663) First of all, it should be noted, that the aim of this chapter is not to provide guidance on whether certain types of agreements can be considered compatible or incompatible with EC competition law[309]. Such an assessment would require in-depth analysis of the individual agreement, taking the factual, economic and legal background into account.

2.4.2.1. Overview of Main Characteristics

(664) For the purposes of the sector inquiry, both originator and generic companies were requested to indicate the agreements they have concluded for the sale/distribution of a generic product (including the sale of an active pharmaceutical ingredient or of a finished product) in at least one of the EU27 Member States in the period 2000 – 2007, where such agreements did not concern patent settlements agreements. The companies were requested to submit copies of all the agreements in which the originator company still benefited from patent protection when the generic product at issue was launched.

(665) These questions were designed to ascertain whether the practice of "own generics" (sometimes also referred to as "authorised generics") – i.e. the introduction of a generic

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309 See Annex: EC Competition Law (Annexes to Chapter A).

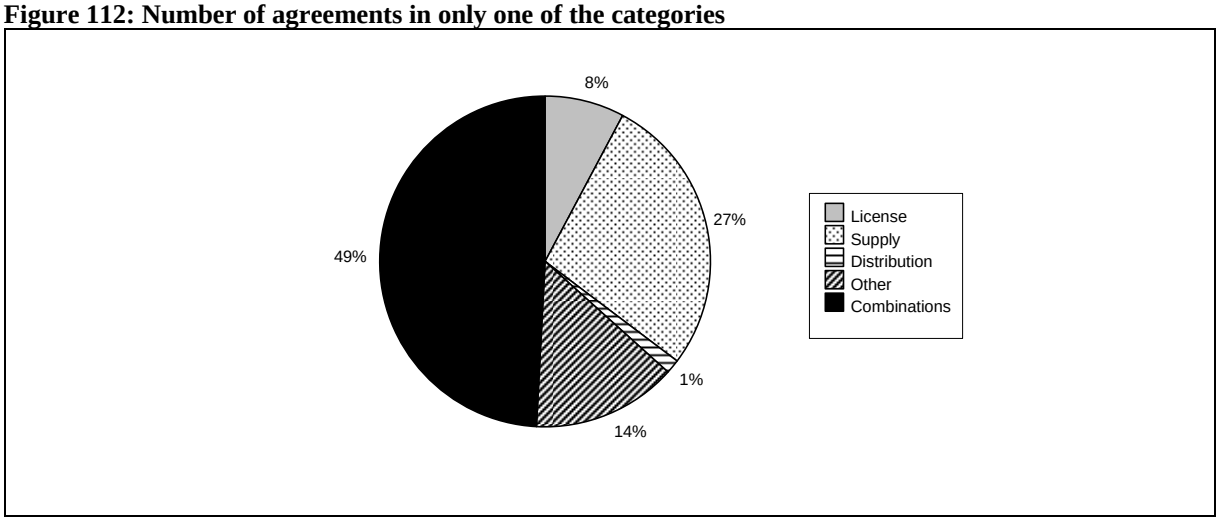
version of an originator company's patented product onto the market before the originator company's product lost its market exclusivity – exists in the EU and how often it is used by originator companies. The strategy of launching an own generic may be part of the tool-box used by originator companies to maximise revenue streams from existing products and to anticipate generic competition. There are various ways for originator companies to launch an own generic product. The launch can be made through a division or subsidiary of the originator company or through an agreement with a generic company, either by granting a licence to the generic company or by producing the generic product and distributing it through a generic company. For the purposes of this section, the focus is on the agreements between originator companies and independent generic companies, i.e. excluding those agreements in which the generic product was launched by a subsidiary of the originator company.

(666) Of the 43 originator companies that responded to the questionnaires during the sector inquiry, almost half (20 companies or 47%) had concluded an agreement with a generic company concerning the sale of a generic product. Of the 27 generic companies that responded to the questionnaires, eight companies responded that they had concluded an agreement with an originator company concerning the sale of a generic product. It has to be noted that, because the respondent companies did not provide a complete set of data on all the questions relevant to this section, parts of the analysis in this section are based only on the information available. As a consequence, statistical analyses presented in figures are not always based on the same number of responses. Accordingly, the sample used in the statistical analysis may not always be of the same size. Precise information on sample size is given in the figures or in the accompanying text.

(667) In total, respondent companies indicated that during the period concerned 284 agreements had been concluded relating to 74 INNs. The agreements were analysed and grouped into categories depending on their subject and are described in detail below.

(668) Based on the replies submitted by the originator companies, almost half of the agreements (140 or 49%) concerned a combination of different types of agreements, in particular licence, supply and distribution agreements in one or more EU Member States. Of the remaining 144 agreements (51%), 78 (27%) included only supply agreements. Four agreements (1%) concerned only distribution, whereas 22 agreements (8%) concerned only licences. The remaining 40 agreements (14%) included other types of agreements, such as transfer of marketing authorisations to generic companies or allowing early generic entry (see Figure 112).

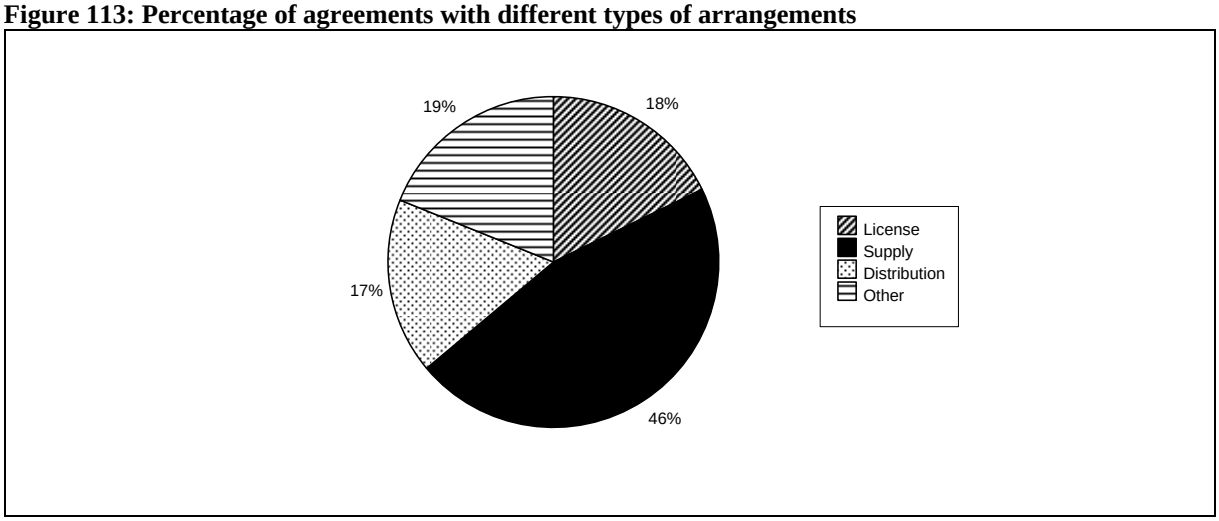
Figure 112: Number of agreements in only one of the categories



Source: Pharmaceutical Sector Inquiry

(669) Taking all agreements into account, almost half (46%) included a supply agreement, 18% included a licence and 17% included a distribution agreement. The remaining 19% of the agreements concerned other types of agreements (see Figure 113).

Figure 113: Percentage of agreements with different types of arrangements



Source: Pharmaceutical Sector Inquiry

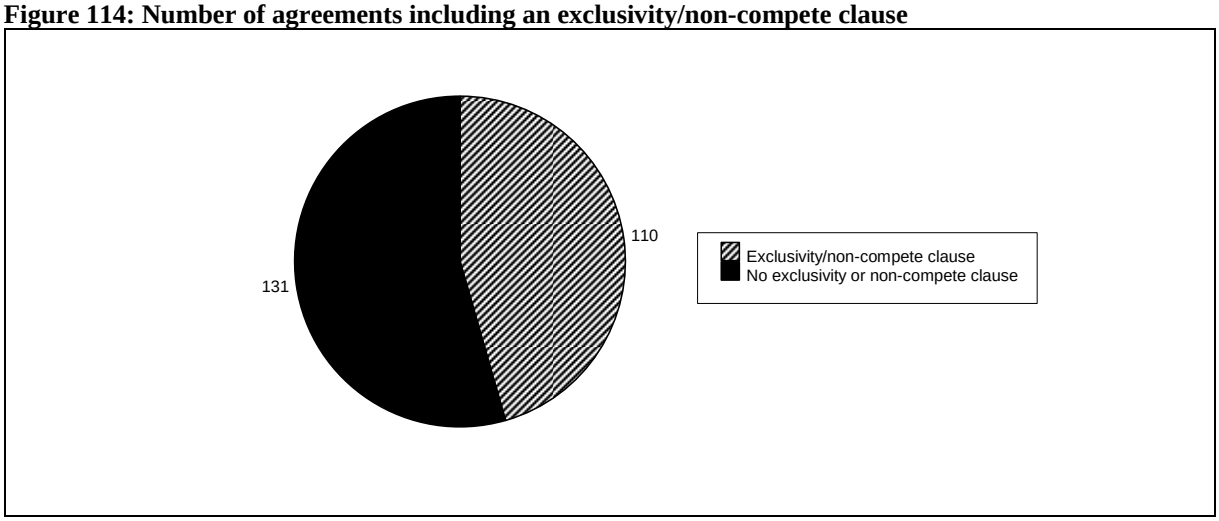
(670) Both originator and generic companies were asked to indicate those agreements that included an exclusivity[310] and/or a non-compete[311] clause. Both clauses should be

[310] According to the Regulation on vertical agreements (EC) No 2790/1999, "exclusive supply obligation" means any direct or indirect obligation causing the supplier to sell the goods specified in the agreement only to one buyer inside the Community for the purposes of a specific use or for resale. Regulation (EC) No 2790/1999 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices, OJ L 336, 29.12.1999, p. 21, available also in http://ec.europa.eu/comm/competition/antitrust/legislation/vertical.html

[311] According to the Regulation on vertical agreements (EC) No 2790/1999, "non-compete obligation" means any direct or indirect obligation causing the buyer not to manufacture, purchase, sell or resell goods or services which compete with the contract goods, or any direct or indirect obligation on the buyer to

understood as being directed at one partner (e.g. sole supplier, purchaser not allowed to market any competing products) or both partners (e.g. exclusive purchase and exclusive distributor). Based on the information available, 110 of the agreements included an exclusivity and/or a non-compete clause, whereas 131 of the agreements did not include any such clause (see Figure 114).

Figure 114: Number of agreements including an exclusivity/non-compete clause



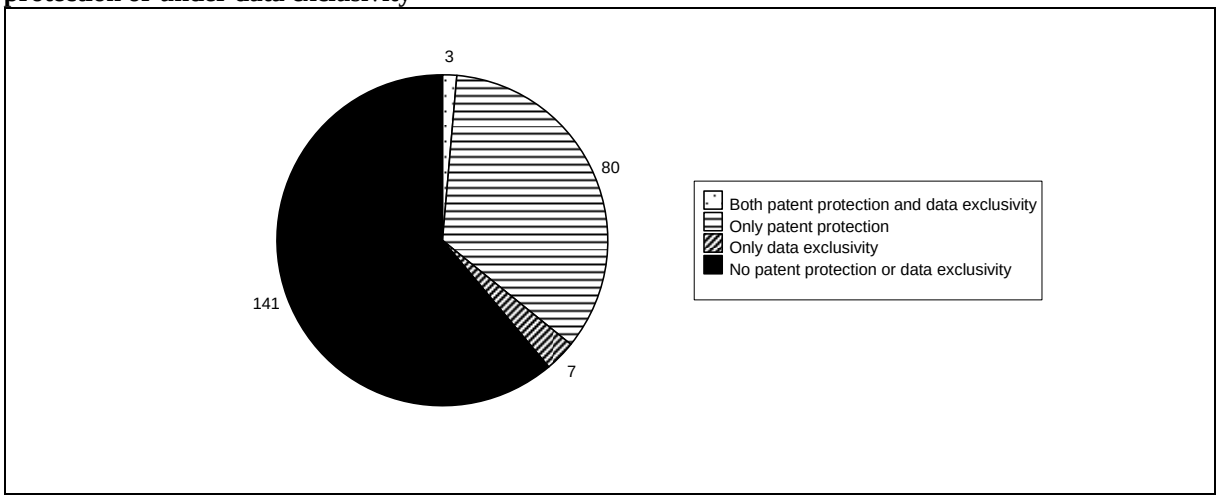
Source: Pharmaceutical Sector Inquiry

(671) Originator companies were also requested to indicate whether, with a view to launching an own generic or a licensed generic, they had one or more generic companies as preferred partner(s). More than half of the respondent companies indicated that they had at least one preferred partner. In particular, some companies submitted that they mainly entered into agreements with generic companies with which they had already worked in the past. They also submitted that they look for partners that have a broad product portfolio (i.e. products from many different therapeutic areas, general practitioners and hospital products) and who therefore have a wide experience in the launching, marketing and distribution of any generic product.

(672) Both originator and generic companies were requested to indicate and submit a copy of the agreements in which the originator company's product at issue was still under patent protection when the generic product concerned was launched. Figure 115 shows the number of these agreements. Based on the information available, the originator company's product benefited from patent protection in 83 agreements. The originator company's product was also protected by data exclusivity in three of these agreements. In seven agreements, the originator company only benefited from data exclusivity. In 141 agreements, originator companies indicated that their product was not protected by patents or data exclusivity.

purchase from the supplier or from another undertaking designated by the supplier more than 80 % of the buyer's total purchases of the contract goods and their substitutes on the relevant market.

Figure 115: Number of agreements in which the originator company's product was still under patent protection or under data exclusivity



Source: Pharmaceutical Sector Inquiry

(673) The 141 agreements concluded after the originator company's product had lost exclusivity concerned mainly supply, distribution and/or licence agreements. These agreements will not be discussed further in this section. However, it should be noted that they are subject to the applicable EC competition law[312].

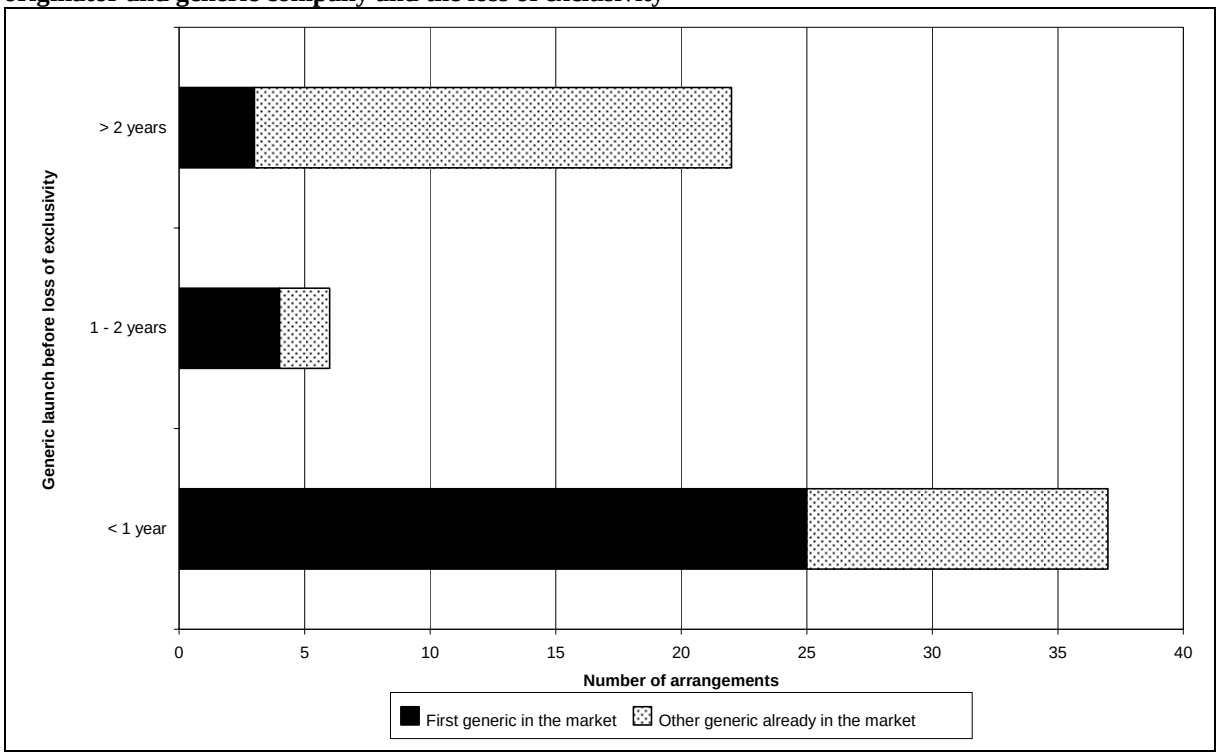
2.4.2.2. Agreements Concluded with Generic Companies before the Originator Company's Product Lost Exclusivity

(674) Based on the data submitted by originator companies, for the period 2000 – 2007, 90 agreements were concluded between an originator and a generic company which led to the launch of a generic version of the originator company's product at a time where the originator company's product at issue was still benefitting from exclusivity. The 90 agreements covered 31 different INNs. Companies were requested to indicate whether other generic companies were present in the market at the time and to provide a copy of any such agreements. Finally, originator companies were requested to explain their general rationale for entering into such agreements.

(675) In these agreements, the timing of the generic entry was compared with the date of the originator product's loss of exclusivity in the following intervals: 0-1 year, 1-2 years and more than two years. Furthermore, Figure 116 shows whether the generic product launched as a result of the agreement was the first generic product in the market or whether there were already one or more other generic products present in the market.

312 See Annex: EC Competition Law (Annexes to Chapter A).

Figure 116: Period of time elapsed between the generic entry further to the agreement between the originator and generic company and the loss of exclusivity



Source: Pharmaceutical Sector Inquiry

(676) Based on the information gathered during the sector inquiry, Figure 116 shows that for 37 of the agreements the generic product brought to the market as a result of the agreement between the originator and the generic company was launched within the last year of the originator company's exclusivity. According to the originator companies and based on the information made available, 25 of the 37 (68%) generic products launched were the first generic product on the market. In 12 of the 37 agreements, there was already another generic product on the market. Another six agreements led to the launch of a generic product one to two years prior to loss of exclusivity. Four of these had already been launched as the first generic on the market and two after the launch of another generic product. In 22 agreements, the generic product was launched well in advance of the originator company's loss of exclusivity (more than two years in advance). Of these, only three were the first generic in the market, whereas a clear majority – 19 (86%) – were launched after another generic was already in the market.

(677) Taking into account the agreements which led to the launch of a generic product less than one year before the originator company's product lost exclusivity, it seems that the originator companies wanted to anticipate generic competition by launching the first generic on the market. On the other hand, for the majority of agreements concluded which led to the launch of a generic product more than two years before the loss of exclusivity, the generic product launched was not the first generic product on the market, which suggests that the originator companies were reacting to the presence on the market of one or more other generic companies. Such a strategy could, for instance, be used if the originator company decided that it was impossible for the company to enforce its patent rights and regain the exclusivity of its products.

(678) Of the 31 INNs for which an agreement had been concluded, 24 (77%) were on the E75 list, i.e. they were among the top selling INNs that lost exclusivity in France, Germany and the United Kingdom in the period 2000 – 2007.

General Considerations of Originator Companies when Entering into Agreements with Generic Companies before the Loss of Exclusivity.

(679) Originator companies were asked to explain their considerations for entering into agreements with generic companies regarding the sale of a generic product when the loss of exclusivity was not imminent, i.e. did not occur until at least one year after the launch of the generic product concerned. In particular, originator companies were asked to indicate the five most important considerations and to explain how this decision was taken.

(680) Most of the originator companies that responded stated in their submission that they applied no general policy guidelines when entering into such agreements with generic companies, thereby taking a decision on a case-by-case basis. However, based on their replies, it is possible to identify some key factors which originator companies consider when entering into such agreements.

(681) The rationale for concluding a supply agreement with a generic company before the loss of exclusivity is summarised in the following quote:

> *"An early entry of a generic product can almost never be excluded. […] Entry of generic product means a rapid loss of market shares by the originator in volume."*

(682) The most important consideration for originator companies seems to be the opportunity to obtain additional revenue from IP rights (namely from primary and secondary patents). In fact, the launch of generic products may increase the overall market for the type of product in question and can contribute to a market expansion. Furthermore, the generic product that is launched first in the market can benefit from certain first-mover advantages. The opportunity to leverage the company's supply capacity and thus create additional revenue is likewise taken into account.

> *"The objective in entering into other arrangements with generic companies is to maximise the income from the products even when they are not sold by [our company] because they do not fit within the therapeutic franchises."*

(683) The above-mentioned statements and considerations appear contradictory in a situation in which an originator company holds market exclusivity for a specific product, which means that it dominates the market and thus has no incentive to share its profits with another company, even through an "own" generic agreement. Such an agreement may only be reasonably envisaged if the originator company becomes aware of the (imminent) market entry of another generic company and is unable to hold the generic rival at bay during the market exclusivity period (e.g. it cannot fully enforce its patent rights against the generic entrant).

(684) Another factor that originator companies find especially relevant when deciding to enter into such agreements is the importance of the product in question and its market size, including its price and sales potential. In this context, particular attention is paid to the company's commercial interests in the product, i.e. whether the company is able

and/or intends to develop its "own" generic product in the near future. Originator companies also take into account the territory in which the agreement will apply and its importance in terms of sales.

(685) Some originator companies stated that they carefully scrutinise the generic company before deciding whether or not to conclude an agreement with it. In this respect, they indicated that they take into account the market position of the generic company and its credit ranking, but also that they might even perform a due diligence on the generic company and its reputation. Some originator companies indicated that they conclude agreements with generic partners who have vital expertise and are able to capture significant market shares in the market concerned. By using the generic companies' distribution systems and customer contacts, originator companies can maximise their profits.

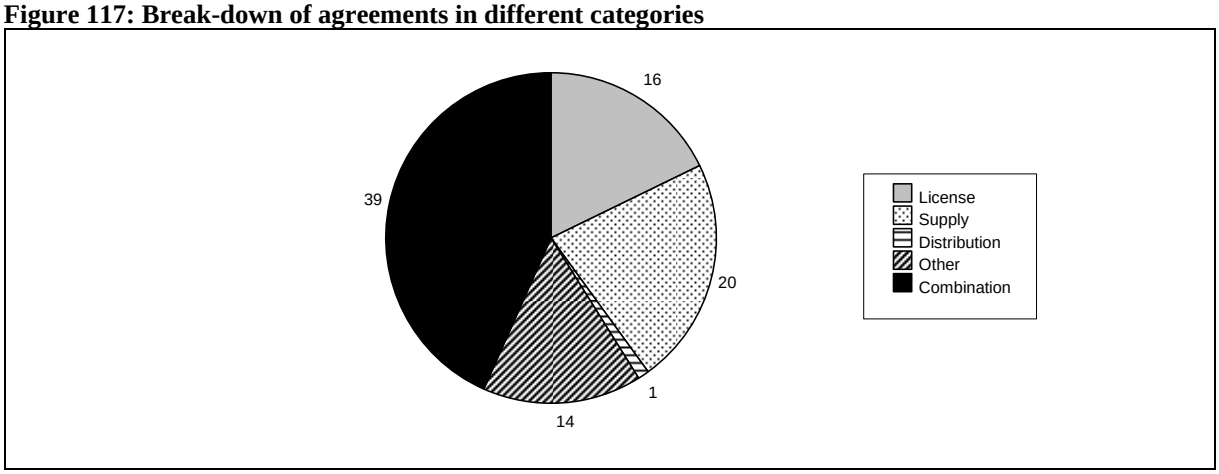
"In view of the lengthy regulatory procedures, there's a need to start a partnership well before a possible early entry by a third party."

(686) As far as the decision-making process is concerned, originator companies stated in their submissions that they decide to enter into such agreements on an *ad hoc* basis and on a country-by-country basis, taking into account the abovementioned considerations, without the need for any formal proceedings being in place. Some companies indicated that, in general, local/sub-regional management is responsible for building a business case, with the help of a number of regional experts (e.g. on health economics, legal issues, patents, regulatory and medical affairs).

Description of the Main Categories of Such Agreements

(687) Taking all of the above 90 agreements into account, 20 (22%) concerned only supply, 16 (18%) included only a patent licence and one (1%) concerned only distribution agreements, whereas 39 (43%) included a combination of one or more of the above agreements. The remaining 14 agreements (16%) concerned other types of agreements, such as transfer of marketing authorisation(s) or allowing early generic entry. Hereinafter, the main categories of agreements, including those that contain a combination of different types, are explained in more detail.

Figure 117: Break-down of agreements in different categories



Source: Pharmaceutical Sector Inquiry

Supply and Distribution Agreements

(688) The majority of the agreements concluded prior to the time where the originator company's product lost market exclusivity were supply and distribution agreements.

(689) Under the distribution agreements, the distributor generally obtained the right to distribute and market the generic version of the product concerned during the term of the agreement in the territory concerned. In some cases, the originator company agreed not to appoint another distributor, thus making the generic company a sole distributor in the territory concerned. However, in most cases the originator company reserved its right to sell the products to other parties and/or market them itself in the territory concerned. The exclusive distribution agreements were generally concluded for a duration of maximum five years.

(690) In the supply agreements, the originator company agreed to supply to the generic company the product or the active ingredient covered by the agreement in order to re-sell it in the territory concerned. In some supply agreements, the generic company committed to purchase exclusively all its needs for the product(s) concerned from the originator company (sole supplier) at a price determined within the agreement. In other agreements, the originator company agreed not to supply the product or API to other parties. In other cases, however, the originator company reserved the right to sell the product freely to other parties.

(691) Most of the agreements containing an exclusive supply obligation were concluded for a maximum of five years. Only one agreement was concluded for the life cycle of the product at issue. The agreements not containing an exclusive supply obligation were concluded for a duration of three years on average.

(692) In several supply agreements, the originator company also transferred its marketing authorisation(s) for the product(s) concerned or the product registration(s) to the generic company. In consideration for this transfer, the generic company usually paid a purchase price to the originator company.

(693) Some supply and distribution agreements included a non-compete obligation by the generic company. Thus, the originator company was entitled to terminate the

agreement if the generic company were to market an alternative product (containing the same active substance or any salt of it) or if the generic company were to purchase alternative competing products from another source in the territory concerned during the term of the agreement.

(694) A number of supply and distribution agreements prohibited active sales outside the territory concerned. Accordingly, the generic company was not allowed to advertise or actively look for customers outside the territory covered by the agreement. Some agreements included an obligation to order minimum quantities of the product(s) concerned, as determined within the agreement.

(695) In some supply and distribution agreements the originator company also assisted the generic company (e.g. by training the generic company's sales force) and/or contributed financially to the promotional information campaigns, at least at the beginning of the term of the agreement.

(696) In some agreements, the originator company granted to the generic company the right to co-promote and actively sell the product concerned in the territory, fixing also a minimum quantity of sales to be achieved by the generic company. In return, the generic company paid the originator company a percentage on the yearly net sales of the product in the territory concerned.

Licence Agreements

(697) In the licence agreements, the originator company granted to the generic company a licence to manufacture, market and promote a generic version of the products covered by the agreement in a certain territory. Such licences were either exclusive or non-exclusive and were either royalty bearing or free of charge. In some licence agreements, the generic company had to purchase the substance concerned exclusively from the originator company (exclusive supply obligation) and it was not allowed to sub-licensee to another party without the written consent of the originator company. Most of the licence agreements were concluded for a duration of maximum five years.

Other Types of Agreements

(698) A number of agreements which were not categorised as licence, supply or distribution agreements between originator and generic companies concerned the sale and transfer of marketing authorisation of the product(s) at issue from the originator company to the generic company in order for the latter company to be able to market the product(s) in the territory concerned. Some transfers were provisional and valid for a certain period of time, after which the generic company would transfer the marketing authorisation back to the originator company. In return, the generic company paid a purchase price agreed within the agreement to the originator company. These agreements were not combined with any supply or distribution agreements.

(699) In six agreements the originator company granted the generic company an early entry right in the market concerned. In particular, the generic company was entitled to import, manufacture and market its own product(s) in the territory covered by the agreement a few months before the originator company’s loss of exclusivity. As

compensation for this early entry right, the generic company paid a lump sum to the originator company.

Summary

The inquiry's preliminary findings confirm that originator companies and generic companies conclude settlement agreements in the EU in order to resolve claims in patent disputes, oppositions or litigation. Between 2000 and June 2008, more than 200 settlement agreements were concluded covering some 49 medicines, of which 63% were best-selling medicines that lost exclusivity between 2000 and 2007.

When assessing the possibilities for settling patent litigation, originator companies are most concerned with the strength of their position, i.e. the probability of winning or losing, as well as with the importance of the product for their overall business (turnover, market shares, presence of other market players, etc.). Generic companies are more concerned with saving costs arising from lengthy and complex litigation proceedings, as well as with removing the uncertainty inherent in patent litigation.

In more than half of the settlements in question the originator company did not impose any restrictions on generic entry. However in 48% of the settlement agreements relating to the EU, the generic company's ability to market its medicine is restricted. A significant proportion of settlements contained – in addition to the restriction - a value transfer from the originator company to the generic company, either in the form of a direct payment or in the form of a licence, distribution agreement or a "side-deal". Direct payments occurred in more than 20 settlement agreements and the total amount of these direct payments from originator companies to generic companies exceeded € 200 million.

In the USA, the Federal Trade Commission has scrutinised patent settlements that contained a direct payment made by the originator company to the generic company combined with a restriction on the generic company to enter the market with its own medicine.

Between 2000 and 2007, originator companies and generic companies entered into a large number of agreements concerning the sale/distribution of generic medicines. One third of these agreements concerned originator medicines which still benefited from exclusivity.

2.5. Other Practices Affecting Generic Entry

(700) This chapter examines the strategies employed and actions brought by originator companies before regulatory bodies other than patent offices (such as those dealing with marketing authorisation, pricing and reimbursement) and vis-à-vis other stakeholders (such as doctors and pharmacists), including distributors and API producers. Originator companies act at different levels, before different authorities and using different means. The forms which this takes are sometimes informal (for example, informal contacts, lobbying, offering training, etc.), but companies also employ formal means such as litigation. In this chapter, their interventions are classified into, first, pre-litigation contacts/disputes and, second, litigation.

(701) The chapter is divided into five sections. Section C.2.5.1. describes interventions brought by originator companies before marketing authorisation bodies. Section C.2.5.2. deals with actions before pricing and reimbursement authorities. Section C.2.5.3. outlines marketing and promotion strategies employed by originator companies and contacts with doctors and pharmacists. Section C.2.5.4. focuses on action vis-à-vis wholesalers/distributors and changes in the distribution chain. Finally, Section C.2.5.5. discusses arrangements between originator companies and API producers.

(702) It should be stressed that Chapter C.2.5. deals with company conduct rather than the obstacles perceived by the regulatory framework itself. Any perceived shortcomings in the regulatory framework are described in Chapter D, in particular Sections D.2. and D.3.

2.5.1. Intervention before Marketing Authorisation Bodies

(703) Before they can place medicinal products on the EU market, generic companies must first obtain marketing authorisation.[313] Although the conditions for obtaining such authorisation are essentially the same for generic and originator products, producers of generic medicines can file an "abridged application" (for details see Chapter B.2.2.). This means that the generic company must establish that the generic product is composed of the same substances – in qualitative and quantitative terms – and has the same pharmaceutical form as the originator product which has already been granted marketing authorisation ("bioequivalence of the reference product"). In return, the generic company can refer to the tests and trials for the reference product (confidential information filed by the manufacturer of the original product when seeking marketing authorisation), if the period of data exclusivity protecting the original product has expired. This is a significant advantage as the tests and trials are the main cost factor in the R&D process.

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313 Chapter B.2.2., provides an overview on the legal framework governing marketing authorisation for pharmaceutical products in the EU and of the procedures and bodies involved.

(704) Originator companies intervene in different ways, at various stages of the generic application procedure and for various purposes before different authorities. The subsections below provide further details of the reasoning behind the interventions by originator companies, whether pre-litigation contacts and disputes or litigation.

2.5.1.1. Pre-Litigation Contacts Related to Marketing Authorisation

(705) Originator companies contact marketing authorisation bodies to draw attention to their concerns about applications by generic producers.[314] An adviser to an originator company described such approaches to marketing authorisation bodies as follows:

> *"Certain Health Authorities will provide [the originator company with] information about pending applications [of generic companies] for marketing authorisation: some formally […], some informally. […] Establishing a good rapport is essential – you are on their side! […] separate functions of persuading/challenging if this helps."*

(706) A widespread practice by certain originator companies is to write to marketing authorisation bodies to express concerns about applications for marketing authorisation submitted by generic companies. The sector inquiry revealed that the most common allegations by originator companies are, *inter alia*, that generic producers infringe patent rights, that the generic medicines are not equivalent to the original medicines or that the generic medicines pose certain health risks for patients. In their letters to marketing authorisation agencies, originator companies sometimes also directly request that the marketing authorisation body does not grant authorisation or does not even start examination of a generic application before the loss of exclusivity (see below for a discussion of the legitimacy of such demands).

(707) Moreover, the evidence gathered reveals that interventions before marketing authorisation bodies may, in certain instances, be a deliberate strategy pursued by some originator companies to delay generic entry. Actions at marketing authorisation level appear to be a standard instrument in the strategic tool-box of some originator companies, sometimes known as "generics defence strategies", "late life cycle management" or "brand protection strategies".

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[314] Originator companies sometimes also contact consultants or scientific experts who advise marketing authorisation bodies on scientific topics.

(708) The following quotes illustrate originator companies' intentions to intervene systematically at marketing authorisation level:

> *"Actions aimed at interacting with the registration procedures of generics attempting to delay entry […]."*
>
> *"Examine potential for regulatory challenges on generic registration processes."*
>
> *"Address the clinical risk of switching from [originator product] to a generic […] rewrite the document into a white paper […] which can be used towards Health Authorities."*

(709) Although the total number of such pre-litigation contacts compared to the overall number of applications for marketing authorisations submitted in Europe every year appears to be limited, the sector inquiry revealed that a significant number of interventions is taking place every year, in particular in relation to high-turnover products.

(710) As regards the frequency of pre-litigation interventions with marketing authorisation bodies, the originator companies reported 118 instances in which they intervened, concerning 28 INNs. Replying to the same question, the generic companies reported that they were aware of 83 instances in which originator companies intervened, concerning 20 INNs. The overlap between these two universes is rather limited (five INNs). Adding the two universes leads to 195 interventions on 43 different INNs. It is noteworthy that one intervention can cover several generic versions and/or several dosages.

(711) Out of the 43 INNs, which were subject to interventions, 22 INNs are part of the E75 list. Moreover, 40% of the pre-litigation interventions concerned only four INNs (see Table 21).

(712) As Table 21 indicates, four INNs out of the 43 INNs where originator companies intervened before the marketing authorisation bodies during a generic application are part of the top 10 INNs on which there were originator-generic pre-litigation contacts (for details see Chapter C.2.2.). In addition, 14 INNs out of the same 43 INNs are part of the top 20 most litigated INNs in the EU 27 (for details see Chapter C.2.2.).

Table 21: **Pre-litigation contacts and disputes per INN towards marketing authorisation bodies** [315]

INN	Number of contacts	Member States	Top 10 INNs for originator/generic company contacts[316]	Top 20 most litigated INNs between originator and generic companies[317]
INN 1	24	DK (1), NL (23)		X
INN 2	21	AT (4), BE (1), CZ (2), ES (1), FI (1), FR (1), HU (1), IE (1), IT (1), NL (1), PL (1), PT (3), SE (1), SK (1), UK (1)		
INN 3	17	AT (1), BE (1), DE (1), DK (1), EL (1), ES (3), FI (1), FR (1), LU (1), NL (1), IE (1), IT (1), PT (1), SE (1), UK (1)		X
INN 4	15	DE (4), DK (1), ES (1), FR (1), NL (3), PT (1), SE (2), SI (1), SK (1)	X	X
39 other INNs	>100	AT (1), BE (2), CY (1), CZ (7), DE (5), DK (3), EL (2), ES (26), FI (3), FR (7), HU (3), IE (4), IT (6), LT (2), LU (1), LV (1), NL (19), PL (6), PT (13), SE (2), SI (3), SK (4), UK (8)	X[318]	X[319]

Source: Pharmaceutical Sector Inquiry

(713) The Member States where marketing authorisation bodies are often approached by originator companies are: the Netherlands (47 occurrences), Spain (34) and Portugal (18).[320]

315 Reliable data from marketing authorisation bodies were not available, as many marketing authorisation bodies have no systematic records of all contacts and disputes, partly because of their informal nature.

316 For further details see Chapter C.2.2.

317 Idem.

318 Out of the 39 "other INNs", three INNs are part of the top ten INNs of originator – generic contacts.

319 Out of the 39 "other INNs", ten are in part of the top 20 most litigated INNs between an originator and a generic company.

320 Sometimes, more than one intervention on an INN is brought in one country, i.e. against products of several generic companies. This can be explained by an originator company intervening in respect of several versions of a generic product or several dosages of the same product, e.g. 10 mg, 20 mg and 50 mg.

Patent Linkage

(714) As outlined in Chapter B.2.2., patent linkage is the practice of linking regulatory approval for a generic medicinal product (in this case, the granting of marketing authorisation) to the patent status of a substance. Originator companies allege that by granting marketing authorisation, the authorities willingly collude in the alleged infringement. The originator companies therefore argue that no marketing authorisation should be granted until the allegation of patent infringement has been settled. Occasionally, actions are accompanied by a threat to sue the marketing authorisation body for damages if marketing authorisation is granted.

(715) Under EU law, linking the granting of marketing authorisation for a product to the patent status of an originator company's reference product is unlawful.[321] The task of marketing authorisation bodies is to verify whether a medicinal product is safe, effective and of good quality. Their main function is to ensure that the pharmaceutical products reaching the market are not harmful to public health. Other factors, such as the patent status of the product, should therefore not be taken into account when assessing the risk/benefit balance of a medicine.

(716) This notwithstanding, originator companies continue to raise arguments based on patent linkage with marketing authorisation bodies in most EU Member States. In some cases, the marketing authorisation body or the legal framework itself facilitate patent linkage. Table 22 provides a brief overview of patent linkage issues reported in the EU at marketing authorisation level during the sector inquiry.

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321 Article 81 of Regulation (EC) 726/2004 and Article 126 of Directive (EC) 2001/83 provide that an authorisation to market a medicinal product shall not be refused, suspended or revoked except on the grounds set out in the Regulation and the Directive. Considering that patent status is not included in the grounds set out in the Regulation and the Directive, it cannot be used as an argument to refuse, suspend or revoke a marketing authorisation. The Commission may launch infringement proceedings against any Member State which infringes the Directive.

Table 22: Overview of patent linkage at marketing authorisation level in Europe in mid-2008

Member State	Level concerned	Alleged patent linkage issues
Hungary	MA legislation and implementation by agency	Article 7(9) of Decree 52/2005 of the Ministry of Health requires generic companies to submit a "patent declaration". This document contains a declaration that the company is not harming any patent right by applying for marketing authorisation for its product and will not market the product until the patent rights have expired.
Italy	MA legislation and implementation by agency, court level	Generic companies report that the marketing authorisation agency requests certification by the applicant that the application for marketing authorisation for a generic product does not infringe any patents. Originator companies also take legal action against the MA agency and against producers of generics.
Portugal	Litigation against marketing authorisation decisions	Originator companies challenge marketing authorisations granted to generic companies in court (see also case study below).
Slovak Republic	MA legislation and implementation by agency	Section 22(8) of Act No 140/1998 states that, where the subject of the decision is not the original medicinal product, the decision on a marketing authorisation for a medicinal product will enter into force the day after the patent protection of the medicinal product or active substance contained in it expires.

Source: Pharmaceutical Sector Inquiry

Claims Related to the Safety or Effectiveness of Generic Medicines

(717) Originator companies often claim vis-à-vis other stakeholders that generic medicines are less safe, less effective or otherwise inferior. Nine originator companies reported the arguments they use when expressing concern about a generic product.[322]

Table 23: Arguments used by originator companies when expressing concern about a generic product

Less safe	Less effective	Inferior	Subject to counterfeit
75%	30%	39%	1.4%

Source: Pharmaceutical Sector Inquiry

(718) The nine companies which confirmed that they had expressed concerns about generic products used the argument that the generic product was less safe in 75% of the 211 cases reported. In 30%, the originator company described the generic product as less effective, in 39% the originator company argued that the generic product was inferior and in 1.4% that it was subject to counterfeit. Note that a single action may fall under

[322] This overview concerns claims made vis-à-vis regulatory bodies and other stakeholders. Out of the 43 originator companies that were asked, nine reported that they had expressed concerns about a generic product, 21 said that they had never expressed concerns and 13 replied "not applicable".

one or more categories (less safe, less effective, inferior or subject to counterfeit) as companies sometimes express several concerns about the same generic medicine.

(719) Note that the concerns expressed by the originator companies concentrate on a relatively limited number of INNs, around 10% of the INNs investigated in the sector inquiry (24 of the 219 INNs, of which 14 are in the E75 group). More strikingly, out of the 211 cases reported, 169 were about just six INNs.

Data Exclusivity

(720) Holders of original marketing authorisation are offered data and marketing exclusivity for the data they have to submit to the national MA body or to the EMEA. As pointed out in Chapter B.2.2., in many Member States the data and marketing exclusivity for the marketing authorisation holder lasts eight - ten years, respectively. In some Member States, the period is just six years.[323] Such data and marketing exclusivity is granted because generic companies will rely on the data of an originator reference product in order to obtain marketing authorisation, i.e. the abridged application procedure. Chapter B.2.2 outlines the concept of data exclusivity in more detail.[324]

(721) Disputes regarding data exclusivity ensued between an originator company and a marketing authorisation body were reported within the sector inquiry for 26 of the 28 data exclusivity interventions reported in the sector inquiry. The remaining two were against a generic company without a parallel action against the marketing authorisation body.

(722) When a dispute on data exclusivity occurs, the originator company often claims, in addition to patent-related issues, that the generic marketing authorisation refers to the originator company's data which are still covered by data exclusivity. Another claim often made is that the wrong reference product has been chosen and that the correct reference product is still protected under data exclusivity. Typically, large originator companies make such claims. Moreover, most companies only intervene on one important INN in their portfolio.

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323 Applications for originator products filed after November 2005 benefit from the following protection: eight years' data exclusivity plus two additional years for marketing exclusivity, which can be extended by one year for new indications.

324 For further details see Figure 32.

Table 24: Summary of main data exclusivity contacts and disputes with a marketing authorisation body

Originator company	INN	Country	Disputes	Top 10 INNs for originator/generic company contacts[325]
Originator company 1	INN 1	AT (1), BE (1), CZ (1), DE (1), ES (1), FI(1), FR (1), HU (1), IE (1), PL (1), PT (1), SE (1) , SK (1), UK (1)	14	
Originator company 2	INN 2	BG (1), PL (3), SI (1)	5	
Originator company 3	INN 3	CZ (2), SK (1)	3	
Originator company 4	INN 4	PT (2)	2	X
Other	2 other INNs	LV (1), PL (1)	2	

Source: Pharmaceutical Sector Inquiry

(723) Generally, originator companies bring separate actions in the same country against each generic version which uses the data on the originator product. Therefore, for most INNs the number of disputes is higher than the number of countries concerned. As Table 24 indicates, six INNs gave rise to disputes, of which two were on the E75 list and one was in the top ten INNs on which originator companies have contacts with generic companies. Interestingly, the vast majority of interventions by originator companies were unsuccessful. Out of the 28 disputes reported, only five are still ongoing. In the other 23 cases, the efforts of the originator company failed, i.e. the generic company was allowed to use the data on the reference product for its abridged marketing authorisation application.

2.5.1.2. Litigation Related to Marketing Authorisation

(724) Originator companies also take legal action against the decisions of marketing authorisation bodies and against generic producers regarding their applications for marketing authorisations. For instance, interlocutory injunctions are used by originator companies as a means to prevent presumed infringements of their patents. Such injunctions may be applied for before, or in conjunction with, the main infringement proceedings. Such actions can be brought before, but also after the decision by a marketing authorisation agency. In these litigation proceedings originator companies use arguments similar to those in their pre-litigation contacts, such as alleged patent infringements or alleged qualitative shortcomings of a generic medicine.

(725) Based on the information gathered during the sector inquiry concerning only the INNs assessed, there are currently many pending litigation cases in which originator companies are challenging decisions by marketing authorisation bodies on the marketing authorisations of generic companies. For instance, in Portugal alone, more than 50 court cases initiated by originator companies against marketing authorisations

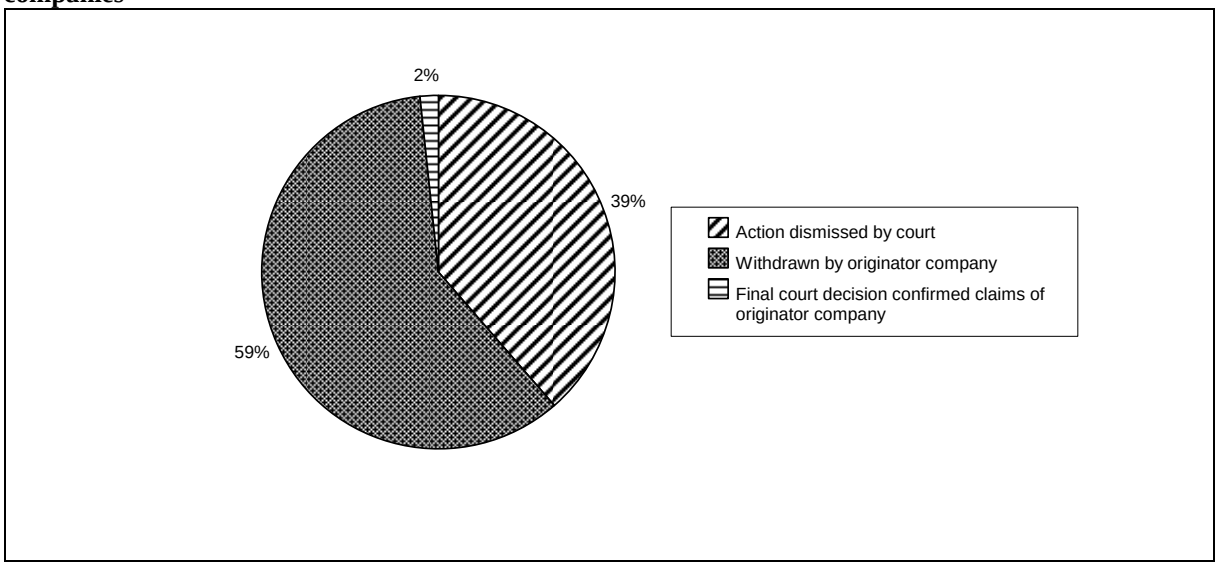
[325] For further details see Chapter C.2.2.

concerning the products of generic companies are pending against the agency in charge of marketing authorisation.

(726) Based on the data reported[326], the sector inquiry identified 137 litigation cases initiated by originator companies against marketing authorisation bodies alleging patent infringement and safety issues concerning marketing authorisations of generic companies. This excludes litigation concerning data exclusivity which is dealt with in the next section.

(727) Whereas 75 cases were still pending (58 of which concerned Portugal), the courts rejected the claims of the originator companies in 24 final judgments and 37 legal actions were withdrawn by the originator company before a final judgment was made.[327] Only one final court judgement confirmed the claims of the originator company. In other words, in a large majority of cases the claims of originator companies were eventually not upheld by the courts and the originator companies lost their case, or alternatively, decided to withdraw their legal action. Figure 118 provides an overview.

Figure 118: Outcome of litigation initiated by originator companies against marketing authorisation bodies regarding patent infringement and safety issues concerning marketing authorisations of generic companies [328]



Source: Pharmaceutical Sector Inquiry

(728) As illustrated by Table 25, the sector inquiry also revealed that a high number of litigations are launched by the same originator companies in several Member States.

326 Data reported in mid-2008.

327 Many withdrawals concern appeal cases where a lower court had rejected the claims of the originator company.

328 This figure only includes cases where the final outcome was known in mid-2008. Consequently, cases where the proceedings are pending are not included. Also, the figure does not include litigation cases concerning data exclusivity, which are analysed in the next section.

Moreover, originator companies generally concentrate their litigation effort on a few substances, generally on not more than three INNs in their portfolio.

Table 25: Overview of outcome of litigation initiated by originator companies against marketing authorisation bodies regarding patent infringement and safety issues (excluding cases concerning data protection exclusivity)[329]

Originator company	INN	Country	Number of litigations	INN included in top 20 most litigated INNs between originator and generic companies[330]
Originator 1	INN 1	BE, DE, DK, FR, UK, EE, NL, PT, SE, UK	> 70	X
Originator 1	INN 2	NL, ES	12	X
Originator 2	INN 3	CZ, HU, PT	8	X
Originator 3	INN 4	BE, NL, SE	7	X

Source: Pharmaceutical Sector Inquiry

Data Exclusivity

(729) The sector inquiry also sought to establish whether data exclusivity gave rise to litigation in the period 2000 – 2007. The inquiry identified 28 disputes and 42 cases of litigation for 43 originator companies surveyed. Litigation regarding data exclusivity is normally brought against national marketing authorisation bodies in the form of legal action against decisions issued by these bodies. This is confirmed by 30 of the 42 litigation cases reported by originator companies during the sector inquiry (see Table 26). Although the mechanism may differ from one country to another, the generic company which had previously obtained the marketing authorisation in question was normally involved in these litigations as an interested party. In the remaining 12 cases, the originator company litigated against the generic company over data protection (see Table 27). In six of the cases reported, parallel litigation was already ongoing against the agency which had issued the marketing authorisation for the generic product based on the originator company's reference data.

329 Litigation concerning data exclusivity is dealt with in the next section.

330 For further details see Chapter C.2.2.

Table 26: Summary of main data exclusivity litigation against a marketing authorisation body

Originator company	INN	Country	Litigations	Top 20 most litigated INNs between originator and generic companies[331]
Originator company 1	INN 1	CZ (7), SK (2)	9	X
Originator company 2	INN 2	NL (4)	4	
Originator company 3	INN 3	BG (1), PL (1), SI (1)	3	
Originator company 4	INN 4	DE (1), SE (1), UK (1)	3	X
Other	5 other INNs	DE (2), FI (1), NL (1), PL (4), UK (3)	11	X

Source: Pharmaceutical Sector Inquiry

Table 27: Summary of main data exclusivity litigation against a generic company

Originator company[332]	INN	Country	Litigations	Top 20 most litigated INNs between originator and generic companies[333]
Originator company 3	INN 3	BG (1), PL (3), SI (1)	5	
Originator company 1	INN 1	CZ (1), SI (2)	3	X
Originator company 2	INN 2	BE (2)	2	
Other	2 other INNs	IT (1), SI (1)	2	X

Source: Pharmaceutical Sector Inquiry

(730) Litigation on data exclusivity had been brought by one quarter of the originator companies which responded to the sector inquiry. Comparison of all the cases of disputes/contacts and litigation shows that some originator companies litigate without prior intervention. Conversely, not all disputes/contacts lead automatically to litigation. In fact, only 20% of disputes/contacts were followed by litigation.

(731) As with contacts/disputes, companies appear to litigate in respect of one particular INN in their portfolio. Ten INNs were covered by the data exclusivity litigation, of which five were on the E75 list and five in the top 20 most litigated INNs between originator and generic companies. Although interventions take place in most EU countries, around 60% of all litigation mentioned by the companies surveyed were brought in the new EU Member States ("EU12").

(732) Considering that the same main companies and main INNs identified under data exclusivity disputes can also be found on the main list of data exclusivity litigation — albeit in a different ranking — the numbering of the INNs/companies is interlinked in

331 For further details see Chapter C.2.2.

332 The originator companies represented by the numbers allocated in Table 26 (originator company 1, 2, 3 and 4) are the same in Table 27 and therefore have kept their respective number of Table 26.

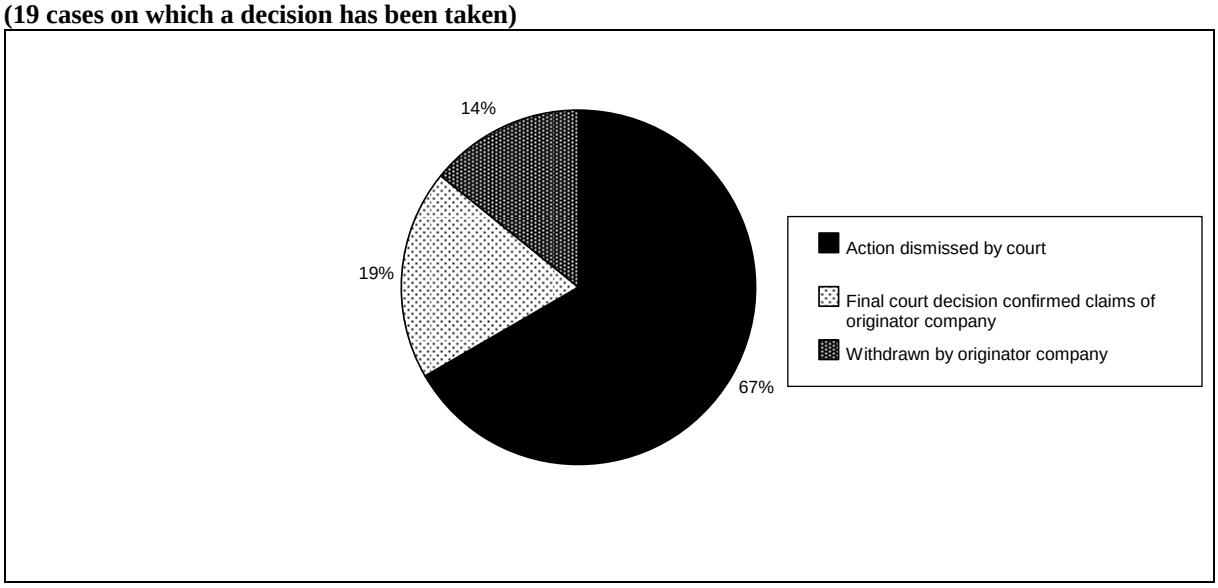
333 For details see chapter C.2.2.

this section. Three of the 10 INNs subject to litigation on data exclusivity are also in the top 20 most litigated INNs between originator and generic companies (for details see Chapter C.2.2.).

(733) As with contacts/disputes, each originator company will litigate separately in the same country against the marketing authorisation body for each generic version using the data on its product. Therefore, for most INNs the number of litigation cases is higher than the number of countries concerned.

(734) Regarding the outcome of the 30 litigations brought against marketing authorisation bodies by originator companies in respect of data exclusivity, nine court proceedings are still pending. In the other 21 cases, the originator company's bid failed in 67% and the originator company withdrew its application in another 14%, i.e. the generic company obtained or maintained its marketing authorisation. In the remaining 19% (four out of 21 cases), the originator companies' efforts to litigate were a success and resulted in the generic producer losing its marketing authorisation. Figure 119 presents the findings, which show that originator companies won only a very limited number of cases.

Figure 119: Overview of outcome of litigation on data exclusivity against a marketing authorisation body (19 cases on which a decision has been taken)

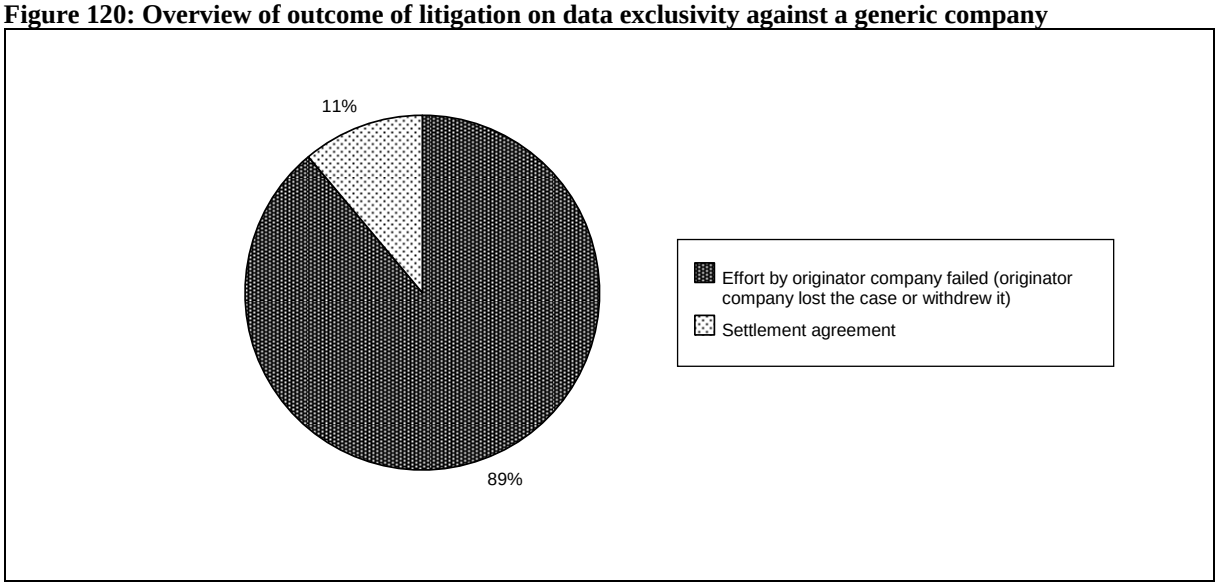


Source: Pharmaceutical Sector Inquiry

(735) Out of the 30 data exclusivity cases involving an originator company litigating against a marketing authorisation body, three interim injunctions with suspension were granted by the courts in Finland and in the Netherlands. Only one of the three interim injunctions was followed by the marketing authorisation of the generic product ultimately being withdrawn.

(736) A figure comparable to Figure 119 has also been prepared for litigation between originator and generic companies on data exclusivity. Three of the 12 cases brought against a generic company are still pending. Figure 120 shows the outcome of the other nine cases and clearly illustrates the very high failure rate for the originator companies which lost in eight of the nine cases (or 89%). The other case was settled in favour of the originator company, with the generic company withdrawing its application and not re-submitting it until after data exclusivity was lost.

Figure 120: Overview of outcome of litigation on data exclusivity against a generic company



Source: Pharmaceutical Sector Inquiry

(737) Out of the 12 data protection cases brought by an originator company against a generic company, at least five requests for an interim injunction were made to the court. However, none of these requests was granted. The Member States involved were the Czech Republic, Poland and Slovenia.

(738) Figure 119 and Figure 120 demonstrate that originator companies are often defeated in court cases concerning data exclusivity. Nevertheless, even though most data exclusivity litigation cases ultimately have no impact on the marketing authorisation, they may still effectively delay market entry and can therefore have a financial impact on generic companies, health systems and patients. Table 28 provides an overview of the number of litigations begun in the period 2000 – 2007 and shows a peak in 2004 – 2005.

Table 28: Overview of data exclusivity litigations by year

Year	N.A.	2000	2001	2002	2003	2004	2005	2006	2007
Number of litigations	6	1	2	7	1	9	9	4	3

Source: Pharmaceutical Sector Inquiry

(739) In conclusion, disputes and litigation in respect of data exclusivity are initiated by originator companies. Whereas the geographic scope is wider for interventions than for litigation, there are more cases of litigation than of intervention. A clear link can also be seen between INNs subject to litigation on data exclusivity and INNs subject to litigation in general as originator companies vigorously defend their commercial interests, in particular for their bestselling medicine.

(740) Some originator companies seem to engage in litigations as a deliberate strategy to delay generics, even though they rate the chances of winning in court as low. Evidence of this is found in the following statement, which suggests that the appeal was filed despite the chances of winning being considered to be low:

"Challenge of Generics MAs [marketing authorisations] [generic product name]

Third party objection based on safety concerns (additional expert opinion by [name of expert])

Third party action filed and fast track motion to re-establish suspensive effect

Motion dismissed by 1st instance (no third party right, appeal filed)

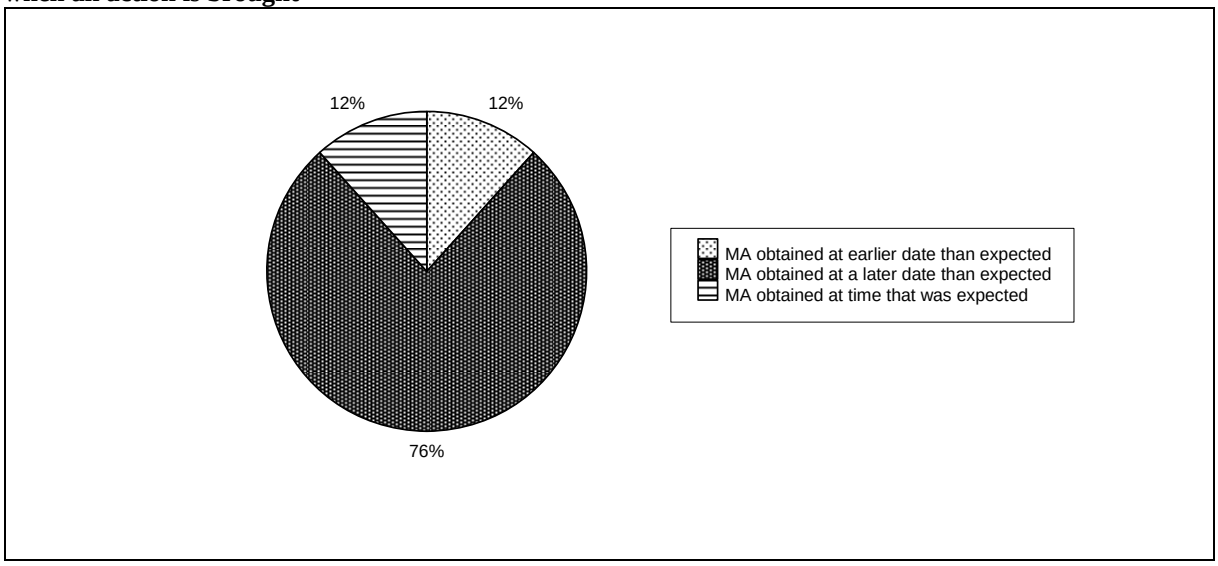
Chances: [of winning appeal] low"

2.5.1.3. Impact of Interventions before Marketing Authorisation Bodies

(741) Returning to the above-mentioned 195 pre-litigation contacts/disputes brought by originator companies before marketing authorisation bodies indicated in Table 21, 52 of the 195 interventions reported to the Commission services were analysed as these were the only submissions for which data were available to allow comparison between the date when the generic marketing authorisation was obtained and the date when the generic company had initially expected to receive approval of its marketing authorisation. It is clear from Figure 121 that in 40 of the 52 cases (76%), marketing authorisation was obtained at a later date than expected. In 12% of these cases, the marketing authorisation was obtained earlier than expected and in the remaining 12% at the time when the generic company had initially expected to receive it (i.e. within one month of the expected date).

(742) When the marketing authorisation was obtained at a later date than expected, it took on average 11 months longer than foreseen. When the marketing authorisation was obtained earlier than expected, it was received on average three months before the company expect it. Some 60% of the products for which marketing authorisation was obtained earlier than expected were launched in Spain. However, there were also delays for the majority of applications reported in Spain. On average, it took 9.2 months longer than expected to obtain the marketing authorisation for each of the 52 analysed cases where intervention has taken place.

Figure 121: Comparison of the expected and actual date of approval of generic marketing authorisation when an action is brought



Source: Pharmaceutical Sector Inquiry

(743) It must be borne in mind that, when a marketing authorisation is obtained later than expected, other factors apart from the intervention could be responsible for the delay. This means that the data gathered does not establish causality between the interventions and the fact of obtaining the marketing authorisation at a later date than expected. However, the data shows a certain correlation as regards to the delays. When compared with a representative sample of other cases in which there was no intervention, the marketing authorisation was obtained on average "only" 5.3 months after the date it was expected, which is 3.9 months shorter than the 9.2 months in case intervention had taken place.[334]

(744) During the sector inquiry, the Commission's services also came across cases where marketing authorisations were granted but their actual entry into force was suspended either by the marketing authorisation body or by following legal action by originator companies. The economic effect of such a decision for a generic company is the same as a refusal to grant marketing authorisation: the generic product cannot be put on the market.

(745) The results of successful actions are also recorded by the originator companies. One originator company summarised the results of actions before health authorities as follows:

[334] A random sample of 164 representative cases where no action was brought by the originator company during appraisal of the application by the generic company for marketing authorisation was compared with a sample of 52 representative cases where actions had been brought. The first sample resulted in an average delay of 5.3 months between the dates when the generic company had expected and when it finally obtained marketing authorisation. When intervention had taken place, this delay increased to an average of 9.2 months per application.

"Interchangeability issues were used in [several countries] to limit generic erosion […] Outcome: extra [originator] product sales of USD 61m in 2 years compared to expected generic erosion. […]"

"Delayed market entry of [generic product] due to requirement for more robust efficacy and safety data. Delay of entry of […] results in USD 350m extra […] sales […]"

(746) Apart from the impact on the business of generic companies, the delays can have significant consequences for public health budgets and ultimately consumers as the lower prices could not be introduced later than expected.

2.5.2. Interventions before Pricing and Reimbursement Bodies

(747) As price and reimbursement levels for prescribed pharmaceutical products are set at national level in most EU Member States, pharmaceutical companies have to reach an agreement concerning pricing and reimbursement for their products with the relevant authorities before launching their product on the market in the Member States concerned. This also applies to generic products. Besides interventions at marketing authorisation level, originator companies are bringing an increasing number of actions before pricing and reimbursement bodies against generic products.

(748) Based on the information received during the sector inquiry, originator companies either write to the pricing and reimbursement bodies or take legal action against them. This might well lead to delays in generic products obtaining pricing and reimbursement status.

(749) When bringing actions, originator companies often base their arguments on safety issues, bioequivalence and "patent linkage". One claimed that certain generic tablets were less safe than the originator company's product, when taken, for example, with alcohol. Another argument sometimes put forward by originator companies is that although the active ingredient of a generic medicine is the same, its effectiveness can be influenced by the production procedure.

(750) Under the applicable EU directive, decisions on prices must be adopted and communicated to the applicant within 90 days of receipt of a valid application.[335] The national authorities cannot extend this time limit, unless the information supporting the application is incomplete or inadequate. Suspending the price approval procedure for any other reason than the ones indicated in the Transparency Directive is considered as a breach of the Directive. Another 90 days are allowed in the Directive for deciding on the reimbursement status.

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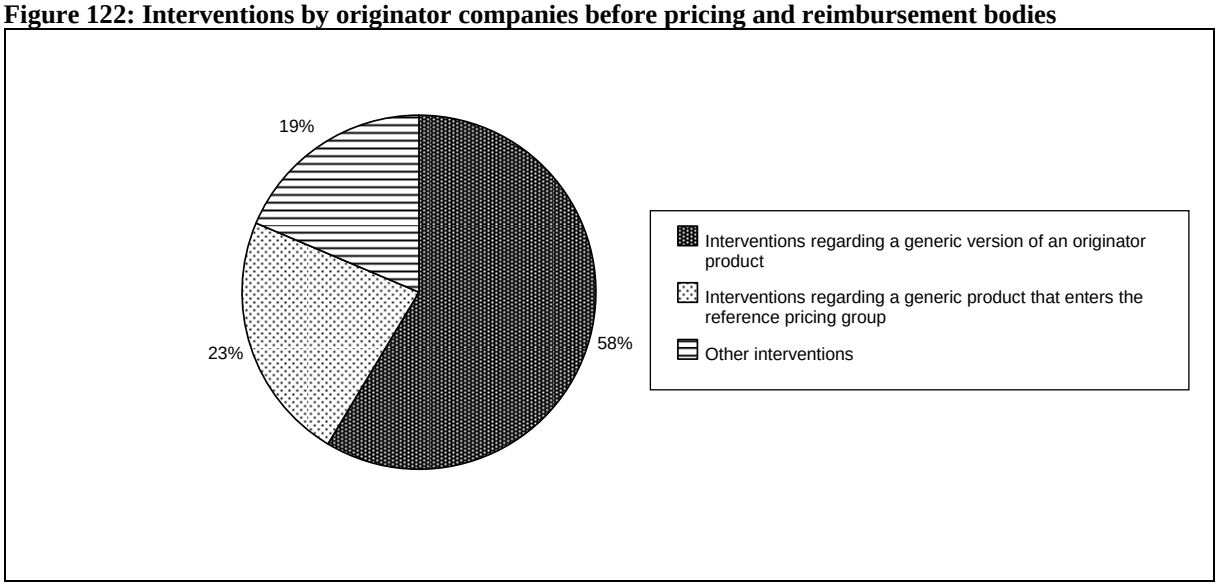
335 Article 2(1) of Directive 89/105/EC.

2.5.2.1. Pre-Litigation Contacts and Disputes with Pricing and Reimbursement Bodies

(751) Originator companies intervene before pricing and reimbursement bodies on various issues. Figure 122 classifies the 70 actions reported in the sector inquiry.[336] Just over half of them (41 cases) concerned the pricing status of generic versions of an originator company's product. The remainder were split between actions against a generic product entering the reference pricing group[337] (16 cases) and on other issues (13 cases).

Figure 122: Interventions by originator companies before pricing and reimbursement bodies



Source: Pharmaceutical Sector Inquiry

(752) In some cases, one litigation concerns several generic companies and several versions of a generic product (such as dosages). For the purposes of the following overview, they have been counted as one litigation case.

336 The 70 cases are based on the interventions that were reported by the originator companies which has been cross-checked with data from national pricing and reimbursement bodies.

337 A reference pricing group can comprise a basket of reference countries used to determine the price or reimbursement status of a medicine (cross-border referencing) or comprises a group of medicines with a comparable therapeutic effect that attract the same price or reimbursement (for details see Chapter B.2.3.).

Intervention Regarding Pricing Status of Generic Versions

(753) The 41 interventions dealing with a generic version of an originator company's product were brought by 12 large originator companies. Table 29 below gives an overview of these 41 actions:

Table 29: Overview of interventions by originator companies before pricing and reimbursement bodies against a generic version of a medicine

Originator company	INN	Interventions	Minimum number of products/dosages concerned	Country
Originator company 1	INN 1	1	31	PT (31)
Originator company 2	INN 2	7	22	ES (17), HU (1), LV (1), RO (1), SK (1), SI (1),
Originator company 3	INN 3	5	22	AT (5), FR (14), HU (1), LV (1), IT (1)
Originator company 4	INN 4	2	14	FR
Originator company 5	INN 5	2	14	EE (1), PT (13)
Five other originator companies	15 other INNs	24	More than 47	AT, BE, BG, FR, HU, IT, LV, PT, SE

Source: Pharmaceutical Sector Inquiry

(754) As can be seen in Table 29 above, originator companies rarely intervened against only one generic version or one specific dosage of their product. Instead, the 41 actions concerned more than 150 generic versions/dosages of originator companies' products. Moreover, all 41 dealt with just 19 INNs, of which eight are on the E75 list. Six of the top 10 INNs on which originator companies had disputes with generic companies (for details see Chapter C.2.2.) appear among the 19 INNs concerned by the 41 interventions.

(755) Regarding the geographical scope, all 41 interventions were brought in a total of 15 countries, of which more than 60% took place in Portugal, France and Austria. In almost all these cases (34 out of 41), the originator companies alleged patent linkage, i.e. that no pricing and reimbursement status should be given as long as the reference product was still patent-protected.

(756) The data gathered during the sector inquiry suggest that originator companies often intervene in parallel at both marketing authorisation and pricing and reimbursement levels. In at least 11 of the 41 cases mentioned in the previous paragraphs, originator companies intervened before pricing and reimbursement bodies in parallel with a request for interim injunctions to obtain suspension of the marketing authorisation of the generic product. Especially in Portugal, the pricing decision is often suspended due to interim injunctions that have been filed against the marketing authorisations (for details, see case study in box). The pricing decision remains suspended until the court has ruled on the marketing authorisation.

Intervention Regarding Reference Pricing

(757) The 16 intervention cases regarding reference pricing[338] may also have an (indirect) impact on generic products. When an originator company applies for a price and reimbursement of its product, some authorities calculate a price by taking a reference group of products. When generic products come on the market and enter such a reference price group, the price and reimbursement of the originator company's product might be adjusted (downwards). Therefore, originator companies may have a commercial interest in keeping generic products out of the reference price group for their products. The generic producers, on the other hand, will endeavour to be included in the reference price group as their presence could well expand the market for their products. Therefore, if originator companies succeed in excluding the generic products from the reference pricing by means of litigation/interventions, they may create obstacles for generic companies. However, the analyses of the 16 relevant interventions clearly showed that none of the attempts by originator companies to raise concerns about inclusion of the generic products in the reference price group succeeded. Some resulted in a compromise on a price cut for an originator company's product after inclusion of one or more generic products in the reference price group.

2.5.2.2. Litigation against Pricing and Reimbursement Bodies

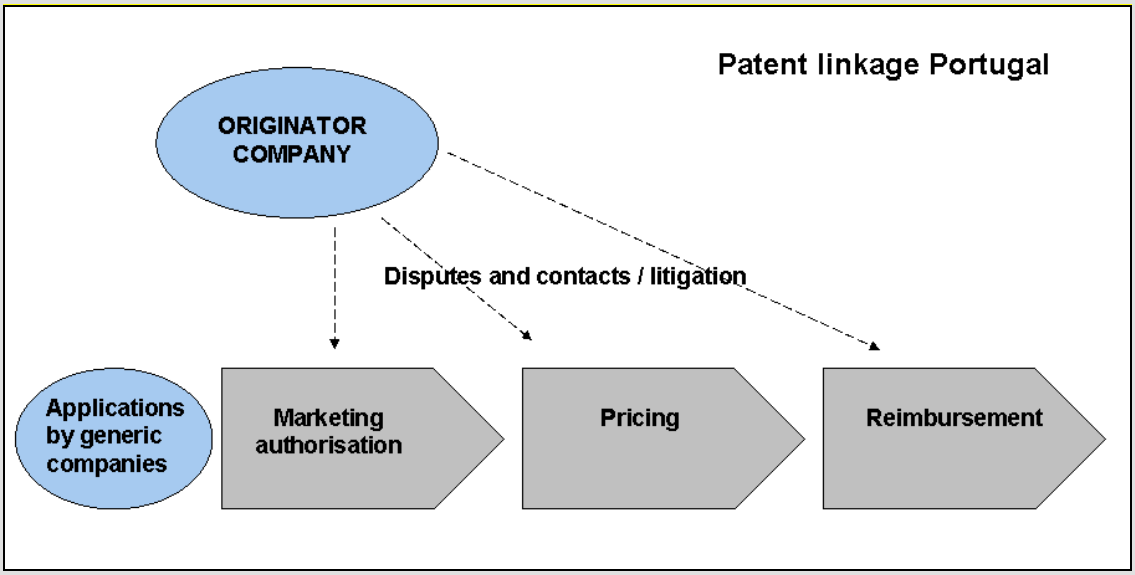
(758) Whereas some originator companies intervene directly before the pricing and reimbursement bodies, some will also litigate against these authorities. If a pricing and reimbursement body is brought to court, several arguments are used by the originator companies. They relate to patent linkage, irregularities in the registration file for the generic medicine, concerns about equivalence or non-compliant promotional material. Portugal is a special case, in that most claims there are based on patent infringement only. Under EU law, patent protection is not a criterion to be considered by the authorities when approving prices or granting reimbursement status.

(759) As described earlier in this section, patent linkage occurs in several EU Member States. By way of example, the following case study takes a closer look at the issues at stake:

338 For further details on reference pricing see Chapter B.2.3.

Box: Case study on patent linkage in Portugal

Clusters of cases involving patent linkage were observed in Portugal during the sector inquiry. Originator companies pursue deliberate actions, including litigation, creating administrative difficulties for generic companies which might result in delays in generic entry. The flowchart below illustrates such actions by originator companies, usually coinciding with the price application by a generic company to the authorities responsible for marketing authorisation and pricing and reimbursement.



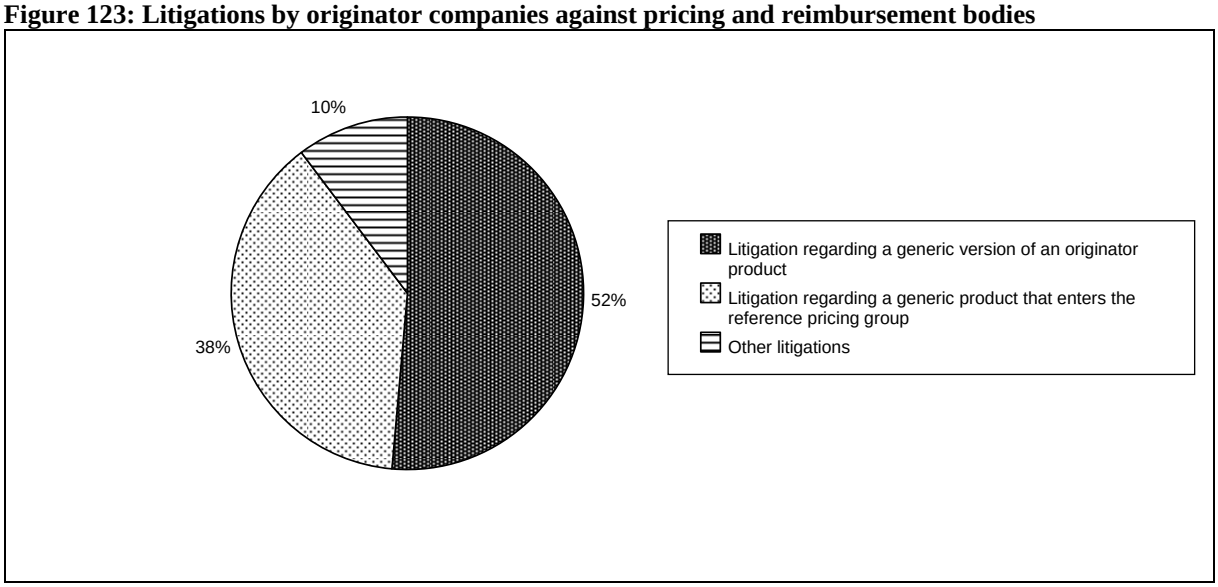
A number of marketing authorisations issued by the Portuguese Medicines Agency (INFARMED) for generic medicinal products have been challenged in the administrative courts by originator companies, on the grounds that the reference products are still protected by a patent. These legal actions have affected the pricing process for the generic products concerned. Indeed, the Direcção-Geral das Actividades Económicas (DGAE) in the Ministry of Economic Affairs and Innovation reportedly suspends the price approval process for generic medicines when originator companies launch legal proceedings based on an alleged patent violation.[339] Several requests for approval of prices for generic medicines were suspended in 2007 and 2008, pending the judgments of the administrative courts to which the cases had been referred. Altogether, more than 70 court cases are currently pending. The court proceedings take a long time. In one case, price approval has been delayed for almost 18 months. Furthermore, in several cases the administrative courts decided to suspend the marketing authorisations granted to generics until the patents expired or until the patent litigation was resolved by the commercial courts.

(760) Figure 123 classifies the 39 litigations reported by originator companies: just over half of them (20 cases) dealt with a generic version of the originator company's product.

339 In mid-2008, the price approval process for more than 120 generic products was suspended. Some of the applications for price approval had been filed as long ago as May 2007.

The remaining actions were divided between litigation against a generic product entering the reference pricing group (15 cases) and other types of litigation (4 cases).

Figure 123: Litigations by originator companies against pricing and reimbursement bodies



Source: Pharmaceutical Sector Inquiry

Litigation Regarding Generic Versions

(761) The 20 litigation cases reported which dealt with a generic version of an originator company's product concern eight large originator companies. Out of the 20 litigations, 12 deal with a patent infringement. Table 30 gives an overview of these 20 litigations.

Table 30: Overview of litigations brought by originator companies against pricing and reimbursement bodies regarding a generic version

Originator company	INN	Litigations	Number of products/dosages concerned	Countries
Originator company 1	INN 1	1	45	PT (45)
Originator company 2	INN 2	2	17	PT (17)
Originator company 3	INN 3	2	17	IT (17)
Originator company 4	INN 4	1	13	PT (13)
Originator company 5	INN 5	1	5	PT (5)
Three other companies	8 other INNs	13	More than 16	BE (5), IT (1), LT (4), PT (6)

Source: Pharmaceutical Sector Inquiry

(762) As can be seen from Table 30, the originator companies rarely litigate in relation to only one generic version/dosage of their products. Often, an originator company litigates against the pricing and reimbursement body regarding more than one generic version/dosage in one court case. However, some companies litigate against the pricing and reimbursement body separately for each generic version. The litigation cases between originator companies and pricing and reimbursement bodies on generic versions of products concerned 44 different generic companies.

(763) The 20 reported litigations regarding generic versions of originator company's products brought against a pricing and reimbursement body dealt with 13 INNs, of which four are on the E75 list. Four of the top 20 most litigated INNs between originator and generic companies (for details see Chapter C.2.2.), feature amongst the 13 INNs concerned in the 20 litigations.

(764) Regarding geographical scope, reported litigations were brought in four countries. Ten of the cases concern Portugal, four were reported in Belgium, three in Italy and three in Lithuania.

(765) As far as the outcome of the litigations is concerned, seven settlements have been agreed (only for cases other than patent infringements), while in six cases the main action is still pending (after failure to obtain a preliminary injunction in some cases), for five the pricing process has been suspended, for one a preliminary injunction has been issued and is currently under appeal and in the last case the preliminary injunction was closed without any main action being filed by the originator company.

Litigation Regarding Reference Pricing

(766) The 15 litigation cases regarding reference pricing concern four companies and four INNs in two countries. Apart from one case in Sweden, all the others occurred in Italy. In every case, the originator companies claimed that no off-patent product should be included in the reference price group of their patented product, as this would violate their patents. In only two instances did the court agree with the originator company. However, appeals might still be lodged by the pricing and reimbursement body. The court ruled against the originator company in five other cases and the remaining eight are still pending.

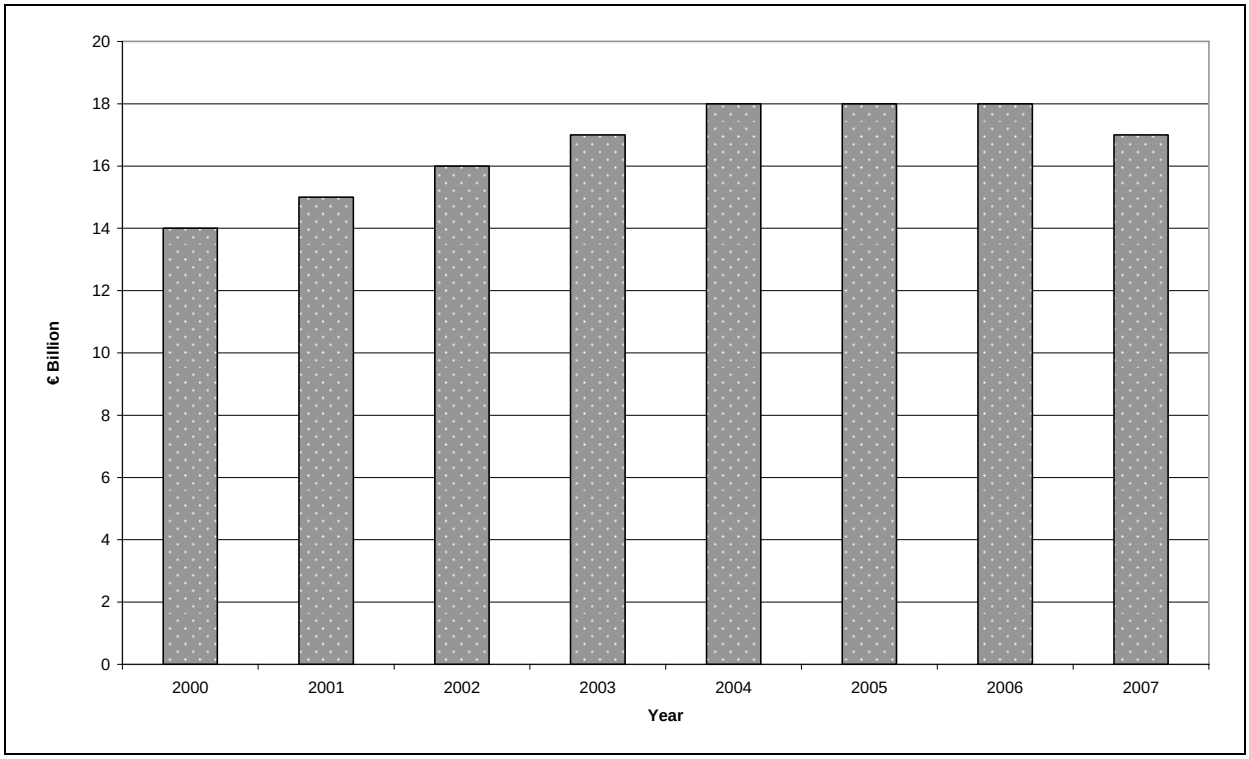
(767) While no final conclusions can be drawn without court outcomes, it is already clear that this practice of litigating against the pricing and reimbursement bodies on the part of the originator companies affects the generic producers as interim injunctions lead to suspension of the pricing and reimbursement status of the generic product until after the court outcome.

2.5.3. Marketing and Promotion Strategies of Originator Companies Affecting Generic Entry

(768) Originator companies incur high costs when developing new medicines and it is essential that their presence on the market is successful if they are to secure a return on their investments. As outlined in Chapter B.1.2. originator companies consider marketing and promotion very important in bringing their medicines to patients and doctors. They argue that providing information to doctors about new products is essential to ensure, *inter alia*, continuous product innovation.

(769) The budgets which originator companies earmark for marketing and promotion are therefore considerable and exceed the amounts spent on R&D. Figure 124 provides an overview of the annual marketing and promotion costs for prescription medicines for human use in the EU. Over the period 2000-2007, the annual marketing and promotion costs increased and were in the range of between 20 and 25% of total turnover.

Figure 124: Annual marketing and promotion costs of 35 originator companies for prescription medicines for human use in absolute terms[340]



Source: Pharmaceutical Sector Inquiry

(770) Based on the strategy documents of pharmaceutical companies submitted during the sector inquiry, business decisions are clearly taken at multiple levels within the respective companies. Whereas the overall strategy for products and most decisions before market launch are taken at global level, companies generally switch to a more regional approach once the product has been launched. Although coordinated, marketing and promotion strategies are customised to the relevant national markets. One originator company put this choice of a more regional/local approach down to the wish:

> *"[…] to take advantage of local growth opportunities with sales forces mirroring local healthcare systems to the largest extent possible".*

(771) Marketing and promotion strategies of originator companies are closely aligned with the "life cycle management" frameworks with a tool-box of instruments and tactics for products which lose exclusivity (see Chapters C.2.6. and C.2.7.).

(772) Both originator and generic companies target health professionals and consumers with promotional activities aiming at increasing sales of their pharmaceutical products. The form and manner in which medicines are marketed and promoted can vary considerably. The next few sections will look at promotion and information strategies

340 Companies with incomplete data sets have been omitted. The largest originator companies are included in the sample.

employed by originator companies to present the advantages of their own products (such as sponsoring conferences or providing training for health professionals), strategies involving next-generation products and "evergreening" combined with an information policy pointing out alleged disadvantages of generic products.

2.5.3.1. Promotion Strategies and Information Policy Presenting the Advantages of the Originator's Own Products

(773) "Marketing and promotion" means all techniques used by companies to promote and sell their own product(s). One major marketing challenge for originator companies is to convince doctors to prescribe their products. As outlined in the introduction to this report, the most important activity in terms of budget is "detailing", i.e. visits by sales staff to doctors and pharmacists. Originator companies also undertake other promotional activities, including meetings, sponsorship, financing travel costs and participation in conferences, gifts/grants/donations, promotional material and training.

Training and Sponsoring of Conferences

(774) Promotion of originator products to doctors can sometimes be undertaken in a covert manner, for example in the form of training sessions (co-)organised by originator companies. A recent case in Germany concerning on-line training for doctors is described below.

Box: German online training case

According to press reports,[341] in 2008 the German competition agency opened an investigation into on-line training for doctors organised by originator companies and endorsed by the German doctors' associations (Landesärztekammer and Bundesärztekammer). Objective product information provided on the internet is a useful and necessary tool for health professionals and consumers. However, in a letter to the Bundesärztekammer, the competition agency expressed concerns that the free on-line training offered by originator companies and endorsed by the doctors' associations contained hidden advertising of the originator companies' products. Hidden advertising of pharmaceuticals is forbidden under German law. This free on-line training also had an impact on independent commercial providers of training which were allegedly excluded from the market. In that respect, the German competition authority expressed concern that the doctors' associations had abused their dominant position when certifying the courses offered by the originator companies. Following a warning letter sent by the German competition authority, one of the originator companies concerned stopped offering on-line training.

(775) Pharmaceutical companies generally spend significant resources on sponsoring conferences, training sessions and other events. Scientific conferences aim to address

[341] Ärztezeitung online, 3 July 2008, Fortbildungskurse: Kartellamt prüft Verstoß gegen Wettbewerbsrecht and Spiegel online, 15 October 2008, Macht der Pharma-Portale erbost das Kartellamt.

one or more medical or other scientific issues in one or more fields of science. The data received during the sector inquiry show that not all companies are systematically spending large amounts of money to promote their products and corporate image by means of conferences. Whereas the expenditure of some pharmaceutical companies on conferences and other events is limited, others (in particular certain large originator companies) sponsor hundreds or even thousands of conferences and/or training sessions in the EU every year.[342] Many companies cover the travel and participation costs of doctors, pharmacists and scientists attending these events.

(776) Spending by pharmaceutical companies on marketing and promotional activities (also applicable to trainings, conferences or gifts) is governed by a number of European directives, national regulations and codes of practice. Two applicable directives are the Community Code Directive,[343] which sets out the rules for placing on the market, production, labelling, classification, distribution and advertising of medicinal products for human use, and the Misleading and Comparative Advertising Directive.[344]

(777) As regards self-regulation by the industry, the Joint Declaration of the CPME (Standing Committee of European Doctors) and EFPIA (European Federation of Pharmaceutical Industries and Associations) was adopted in June 2005. The CPME and EPFIA considered it essential to establish a framework that could serve as guidelines at both European and national level for the relationship between the medical profession and the pharmaceutical industry. Companies should normally implement this code of practice (although, strictly speaking, it is not legally binding) by means of clear in-house policies and procedures which aim at ensuring that the Joint Declaration and national pharmaceutical regulations are strictly followed in all marketing and promotional activities.

(778) Out of the 43 originator companies surveyed, two were unaware of the Joint Declaration of the CPME and EFPIA, whilst a third company had only heard of the code. The 40 companies that were aware of the Joint Declaration replied that they follow these rules.

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342 During the sector inquiry companies reported that they sponsor many conferences/seminars, as illustrated by the following representative examples: one originator company sponsors more than 2 500 conferences and seminars a year in EU-27 (excluding pure promotion events); another reported that it had sponsored more than 50 000 events over the period 2000-2007.

343 Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community Code relating to medicinal products for human use (OJ L 311, 28.11.2001, pp. 67-128).

344 Directive 2006/114/EC of the European Parliament and of the Council of 12 December 2006 concerning misleading and comparative advertising (OJ L 376, 27.12.2006, pp. 21-27). The Commission is currently preparing a proposal for legislation on information to patients to ensure good-quality, objective, reliable and non-promotional information on prescription-only medicinal products to citizens and to harmonize the existing situation in Member States in this area. See: .http://ec.europa.eu/enterprise/pharmaceuticals/patients/patients_key.htm

Table 31: Overview regarding the Joint Declaration of the CPME and EFPIA

Companies aware of the Declaration	Companies not aware of the Declaration	Reported violations of the Declaration
40/43	3/43	629

Source: Pharmaceutical Sector Inquiry

(779) According to these 40 companies, up to the end of 2007 there had been a number of violations since the Joint Declaration was signed. These could take the form, for instance, of providing inappropriate leisure activities to doctors or including inaccurate or incomplete information in promotional material. Out of the 43 companies questioned, 23 gave figures, whereas eight just said that some violations had occurred but had no data. A total of 629 alleged violations of the Declaration were reported to the Commission.

(780) Most companies stressed that violations resulted in appropriate action to remedy them, including disciplinary measures, changes to marketing material, additional training and adaptation of compliance processes. Nevertheless, some marketing and promotion practices of originator companies are often interpreted differently by consumers.

(781) BEUC explained:

> *"We believe that these promotional activities, often breaching the existing legislation and codes of conduct can be detrimental for consumers as they can have an undue influence in prescribing behaviours, create a distortion in the doctor/patient relationship and ultimately lead to irrational drug use by consumers".*

(782) Promotional activities aim not only to inform and convince doctors about specific products, but also to create product and brand loyalty as pharmaceutical companies want to secure continued sales of their products. Certain strategies targeted on product loyalty may contribute to creating obstacles for competing medicines, including generic products.

2.5.3.2. Information policy on alleged risks and disadvantages of generic products

(783) Apart from general promotion and marketing strategies, originator companies also appear to engage in practices that could be seen as calling into question the equivalence and/or quality of generic products. The sector inquiry confirmed that such information policies are indeed adopted by several originator companies, particularly during the launch of a competing generic product. One widespread practice on the part of originator companies is, for example, to send warning letters to pharmacists, wholesalers, hospitals or doctors about the generic versions of their product. Some originator companies or associations of originator companies also launch marketing campaigns which could be viewed as pointing out the disadvantages of generic products.

Warning Letters

(784) The sector inquiry confirmed that originator companies follow a certain pattern when sending warning letters. Often, originator companies start to send warning letters to generic producers when they become aware that generic companies are preparing to launch a generic version of their product.

(785) As one originator company notes in an in-house strategy document:

> *"Draw up standard letter to send to companies planning to launch generic [product] to warn for potential patent infringement. Draw-up follow-up letter with stonger text. […]"*

(786) This practice is further described in Chapter C.2.2. After they have sent warning letters to generics companies and health authorities (see above), it is not uncommon for originator companies to start sending letters to doctors. Pharmacists also receive letters from originator companies but, based on the information received during the sector inquiry, to a lesser extent as they are not the ones who prescribe the medicines.

(787) In the course of the sector inquiry, many examples of such letters were received. In certain cases, originator companies sent letters to thousands of doctors, pharmacists and hospitals.[345]

(788) The sector inquiry revealed that in communications with doctors and pharmacists, originator companies will mention ongoing court cases and alleged infringements of patent rights. Doctors and pharmacists are given the impression that they would be infringing patent law if they were to prescribe or dispense the generic product while the court case is still pending. A significant number of letters even mention the possibility of damage claims against doctors and pharmacists prescribing/dispensing the generic product, as can be seen from the following quote from a letter from an originator to pharmacists:

> *"We reserve the right to hold you [pharmacist] responsible for damage [our company] might suffer by substitution of [our product] by [the generic version]".*

(789) Some of the letters sent to doctors and pharmacists by originator companies mention that research and development is primarily undertaken by originator companies and that only those companies offer added value to doctors and their patients. If the originator companies criticise the generic product in their letter, their main arguments are once again based on the generics being less safe, less effective, inferior and unsuitable as substitutes.

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345 In one case in Germany, an originator company reported that it had sent about 164,000 letters concerning one product in a relatively short period: approximately 84,000 to doctors about the new formulation, approximately 60,000 to doctors about the terms of reimbursement and approximately 20,000 to pharmacies about the terms of substitution.

(790) Hospitals are also targeted by originator companies. The letters which originator companies send to hospitals do not primarily discuss the product characteristics of a generic medicine but place greater emphasis on the legal uncertainty concerning the generic product, as do the letters sent to doctors and pharmacists. The warning letters which originator companies send to hospitals are not always unsuccessful, as can be seen from one hospital's reaction after receiving a letter from an originator company (however, this might be an exceptional case):

> *"I have recently been informed by [name of an originator company] of [your generic company's] illegal methods of doing business [= offering a generic version of product X with alleged patent infringement]. […] [As a consequence of this] […] you are no longer welcome to make presentations of your products [in this hospital]."*

(791) It must be added that the originator company which sent the original letter to the hospital was eventually unsuccessful in the patent infringement case referred to.

Information Campaigns

(792) Certain originator companies or their associations use an indirect way of influencing public opinion towards trusting originator medicines ahead of generic medicines. The message that originator companies tend to send is that generic products are not of good pharmaceutical quality and are less effective. There are also campaigns by generic companies and associations in favour of generic medicines, sometimes supported by public health authorities.

(793) In Spain, for example, a national press campaign was mounted in June 2007, sponsored by Farmaindustria, the Spanish association representing the originator industry. A full-page advertisement was published in the leading newspapers featuring a single unlabelled bottle of pills followed by a sentence which read "¿A que la marca sí es importante?" ("The brand name is also important, isn't it?"). By way of illustration, two versions of the Farmaindustria campaign are reprinted below.

Source and copyright: Farmaindustria (Spanish industry association)

(794) Negative advertising by originator companies also appears in scientific journals. A certain originator company used the slogan "Do not consider my original product X to be equal to the generic products." without mentioning any scientific reference. Again the main message being conveyed is that generic products are not "equivalent", even though the marketing authorisation agencies had confirmed bioequivalence.

(795) A recent case in France illustrates how some originator companies may adopt a very aggressive commercial strategy during the launch of a generic medicine.

Box: Commercial practices by an originator company in France

One originator company facing the launch of a competing generic product systematically criticised the generic product via its sales staff (alleging, *inter alia*, lack of effect, inferior quality and a negative impact on patients' health). At the same time, the originator company switched its distribution channel from wholesalers to direct-to-pharmacy, including strong commercial incentives to dispense the originator's product (long payment terms, rebates and remunerated questionnaires) in order to fill pharmacy shelves. As a result, penetration by the generic product was not particularly successful. Entry was blocked and the market share of the generic medicine kept below 10%, which was unusual as normal market penetration would have been expected to have been around 50%. The generic company complained to the French competition authority which granted an interim measure.[346] The originator company was ordered to publish a statement in the professional press that the generic product is fully equivalent to its product and is absolutely safe.

2.5.4. Interventions vis-à-vis Wholesalers/Distributors and Changes in the Distribution Chain

2.5.4.1. Pre-Litigation Contacts and Disputes with Wholesalers

(796) Originator companies also contact wholesalers about ongoing legal actions against generic companies pursuing alleged patent infringements. Wholesalers have reported several cases where they have been made aware of such legal proceedings and requested not to distribute the generic medicines concerned as long as the litigation is pending. Often harshly worded letters request wholesalers to inform the originator companies whether the generic products have already been received or distributed. In some cases, originator companies also requested the wholesaler to sign a written declaration not to distribute the generic medicines. Wholesalers report that these practices may create considerable uncertainty on the market and mentioned cases where distribution of generic drugs had been severely impeded or blocked.

(797) In all, nine of the originator companies surveyed reported more than 500 disputes with wholesalers on alleged patent infringements.[347] All the disputes reported concerned just 16 out of the list of 219 INNs. Twelve of these 16 INNs are on the E75 list.

(798) Germany, the Netherlands and Spain are especially prone to approaches by originator companies to wholesalers to draw their attention to their patents. Most of the

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346 Case number 07-MC-06. Press release at: http://www.conseil-concurrence.fr/user/standard.php?id_rub=211&id_article=865.
The originator company's appeal against the interim measure was rejected in court of first instance. The case is under appeal.

347 Another 200 interventions were reported by originator companies regarding parallel imports. However, as parallel trade does not fall within the scope of the sector inquiry, these cases are not assessed in this report.

approaches reported were made in the form of warning letters sent by originator companies or their legal advisers.

2.5.4.2. Litigation against Wholesalers

(799) Originator companies also take wholesalers to court over patent infringements if wholesalers (plan to) distribute generic medicines on which patent disputes or litigation are pending between the originator company and a generic company. This is illustrated by the Danish case described below.

Box: Litigation against a wholesaler in Denmark

An originator company applied for interim injunctions against a wholesaler over its distribution agreements with generic companies in Denmark.[348] This wholesaler acted as a distribution warehouse for a number of generic companies. The originator sought and obtained an injunction against the wholesaler for its alleged intention to distribute products infringing its patent rights, even though each of the generic companies which use the wholesaler had confirmed that it had no intention to import the product concerned. The Danish court granted the injunction against the wholesaler on the basis of the marketing authorisations issued to the generic companies ruling that the existence of the marketing authorisations was a sufficient threat to constitute an infringement of the patent rights of the originator company.

(800) However, most of the court cases deal with patent infringements. The sector inquiry revealed that out of the 15 litigation cases between an originator company and a wholesaler in EU27 over the period 2000 – 2007, 12 were about patent infringements. Table 32 gives an overview of the 15 litigations reported:

Table 32: Overview of litigations against wholesalers

INN	Number of litigations	Member States	Top 20 most litigated INNs between originator and generic companies[349]
INN 1	6	DK (6)	X
INN 2	3	DK (2), HU (1)	X
INN 3	2	IT (1), LV (1)	X
INN 4	2	ES (2)	X
INN 5	2	DK (1), SI (1)	X

Source: Pharmaceutical Sector Inquiry

(801) The 15 court cases against wholesalers were brought by four large originator companies on a total of five INNs, all of which are in the top 20 most litigated INNs between originator and generic companies (for details see Chapter C.2.2.). The Member States where wholesalers were brought to court are Denmark, Hungary, Italy,

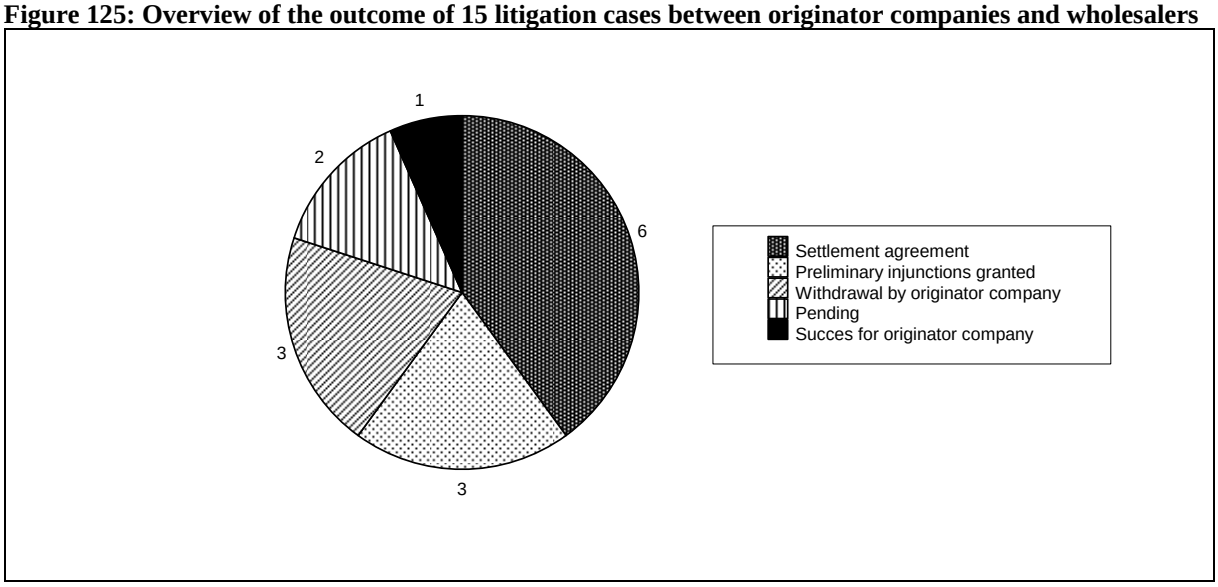
[348] Danish District Court case number FS 1-13061/2007. The case is currently under appeal.

[349] For further details see Chapter C.2.2.

Latvia, Slovenia and Spain. A high number of litigations was reported from Denmark where nine out of the 15 reported court cases were brought.

(802) Several of the court cases against wholesalers (six out of 15) were settled, as can be seen from Figure 125, which gives an overview of the status/outcome of the 15 litigations. The settlement agreements are often linked to other legal proceedings and sometimes involve a payment to the generic company that supplied the wholesaler with the products concerned, mostly for damages claimed by the generic company. In three court cases, a preliminary injunction was granted and distribution of the generic product was prohibited. Another three cases were withdrawn and two are still pending. Only one court case was won by an originator company, with the result that the generic product was withdrawn from the market until the patent expired.

Figure 125: Overview of the outcome of 15 litigation cases between originator companies and wholesalers



Source: Pharmaceutical Sector Inquiry

(803) To conclude this section, a brief overview of stakeholders who have received letters from originator companies and of the main arguments used in them, as reported during the sector inquiry, is set out below.

Table 33: Overview of the typical arguments used by originator companies vis-à-vis the main stakeholders

Stakeholders	Typical arguments used
Generic producers	The originator's product is covered by various intellectual property rights, such as patents, data exclusivity , etc.
Marketing authorisation pricing and reimbursement body	The generic product is less safe or not bioequivalent. Possible patent infringement.
Doctors	Legal situation: Prescribing the generic version will be considered an infringement of our patent rights. Safety issues. "We do the research."
Pharmacists	Legal situation: Selling the generic version will be considered an infringement of our patent rights. Safety issues. "We do the research."
Hospitals	Legal situation: Until court cases produce a final outcome, refrain from buying generic products that might infringe patent rights. Safety issues.
Wholesalers	Wholesalers will be brought to court if they (plan to) distribute generic medicines on which patent disputes or litigation are pending.

Source: Pharmaceutical Sector Inquiry

2.5.4.3. Direct-to-Pharmacy (DTP) Distribution

(804) The traditional model of pharmaceutical distribution in Europe is changing, as major manufacturers switch to a direct-to-pharmacy (DTP) approach. The recent adoption of this model by some of the industry's largest players in the UK could be a sign of a new trend that could spread across Europe.

(805) In the majority of EU Member States, disregarding sales to hospitals, the distribution system operates on the basis of a manufacturer—wholesaler—retailer model. Wholesalers purchase medicines from manufacturers and supply the medicines to pharmacies at a margin. As indicated in Chapter B.1.1., there are broadly two types of wholesalers: those who deal in the full range of medicines marketed in a particular country, known as full-line wholesalers, and those specialising in a limited range, known as short-line wholesalers.

(806) In DTP distribution, the pharmaceutical company sells the medicines directly to the pharmacist. The medicines are delivered by a logistics service provider, which is generally paid a delivery fee per pack and, unlike under the current wholesaler arrangements, does not acquire ownership of the medicine. Typically, an originator company selects one of the large wholesalers to act as its logistics provider.

(807) As regards the forms of DTP system, a distinction can be drawn between (1) exclusive DTP systems and (2) semi-exclusive DTP systems. In exclusive DTP systems, all orders and deliveries are handled by one exclusive logistics service provider. This can be either the full range of prescription products or individual products. In semi-exclusive DTP systems, all orders and deliveries are handled by two or three logistics service providers. In both cases, all other wholesalers are denied access to the medicines covered by the DTP system.

How widespread is DTP currently?

(808) As can be seen from Table 34, DTP has already been introduced in the UK by several originator companies with a total market share of approximately 30%.[350]

Table 34: Overview of DTP systems already introduced in the UK

Company	Start date	Products affected
Originator 1	March 2007	All prescription medicines are exclusively available from one logistics provider.
Originator 2	November 2007	Certain medicines are available from only one logistics provider.
Originator 3	February 2007	All products are available from only two logistics providers.
Originator 4	October 2007	All products are available from only three logistics providers.

Source: Pharmaceutical Sector Inquiry

(809) Following detailed examination, on 11 December 2007 the UK Office of Fair Trading (OFT) published a report on DTP arrangements in the UK.[351] The OFT found that, although DTP did not contravene competition rules, there was a significant risk that such arrangements would result in higher costs to the National Health System (NHS). According to the OFT, pharmaceutical companies adopting DTP schemes have the power to reduce the discount given to pharmacies under the traditional wholesale model. Whether this conclusion could apply elsewhere in the EU may depend on the particular features of supply-chain remuneration in a Member State.

(810) Moreover, according to a wholesalers association, its model includes cross-subsidisation between high-value, high-volume medicines and low-value, low-volume medicines. One possible effect of DTP could be that full-line wholesalers are left with the economically less "attractive" product segment, whereas the economically attractive products are distributed by DTP and short-line wholesalers. Hence, the current cross-subsidisation would be undermined, thereby creating upward pressure on the distribution margin and leading, ultimately, to higher prices in the low-value, low-volume product segment and, possibly, to a deterioration in service levels.

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350 Based on the figures given by the OFT (2007) report: Medicines Distribution. An OFT market study, p. 22. http://www.oft.gov.uk/shared_oft/reports/comp_policy/oft967.pdf.

351 http://www.oft.gov.uk/shared_oft/reports/comp_policy/oft967.pdf

(811) The OFT announced that it would carefully monitor the exclusivity of medicine distribution arrangements, in order to assess competition in the sector and to take action if necessary.

(812) In its reply to the sector inquiry questionnaires, one major originator company argued that DTP is necessary to improve the security of the supply chain and reduce the risk of penetration by counterfeit medicines. Once the pharmaceutical product leaves the manufacturer, it can pass through a number of intermediaries before arriving at the pharmacy. This would make it easier to introduce counterfeit medicines into the legal supply chain. However, other stakeholders in the distribution chain claim that the underlying motive for originators to switch to DTP is not to stop counterfeit medicines reaching the shelves, but to limit parallel trading of medicines.

Future Developments

(813) The sector inquiry received information indicating that DTP is currently spreading to several Member States, most prominently Poland and Portugal. However, it has been argued that in certain Member States, such as Portugal, it would be difficult to reconcile DTP systems with the public service obligations that wholesalers must meet.[352] Although pharmaceutical companies are free to choose the distribution methods they deem appropriate, possible anticompetitive aspects of certain arrangements are and will be carefully scrutinised by the competition authorities in the EU.

Impact of DTP on Market Participants/Distribution of Generics

(814) Many of the generic companies questioned either gave no firm opinion on DTP arrangements or found it too soon to judge their effects. However, a significant number expressed the view that DTP could have negative effects on their business, in particular in the long run. Some respondents stated that widespread adoption of DTP could lead to small manufacturers, both originator and generic companies, experiencing distribution difficulties as distribution costs would increase. In addition, there could be lower discounts to pharmacies, resulting in an increase in medicine prices. Another consequence of DTP highlighted by generic and originator companies alike is that it would lead to concentration at wholesale level, reducing competition in the sector.

One of the generic companies notes that:

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352 "The obligation placed on wholesalers to guarantee permanently an adequate range of medicinal products to meet the requirements of a specific geographical area and to deliver the supplies requested within a very short time over the whole of the area in question." Article 1(18) of Directive 2001/83/EC on the Community code relating to medicinal products for human use, amended by Directive 2004/27/EC of the European Parliament and of the Council of 31 March 2004 (OJ L311/67 p.67). See also the section on wholesalers in Chapter B.1.1.

"The 'direct to pharmacies' strategy introduced by several originator companies is the materialisation of the will of a number of companies to increase their economic aggressiveness to maintain their sales volume, mainly to face generic competition. In itself, it is a legitimate move as long as these companies do not use the monopoly products they own to improperly bundle sales with other products, namely products which face generic competition."

(815) Some market participants have also reported that a number of smaller wholesalers have closed down in the UK following the introduction of DTP arrangements.

Impact of DTP on the Availability of Medicines

(816) Some associations representing pharmacists and wholesalers expressed doubts about whether the present service levels can be maintained under a DTP system, where orders for medicines must be placed directly with the manufacturer.

(817) In their opinion, DTP could lead to supply delays and, consequently, difficulties for patients. They also claim that if the viability of the traditional distribution model is seriously affected, those wholesalers who remain in the market may be forced to reduce levels of service, which again could lead to availability difficulties.

(818) According to one association, DTP also allows manufacturers to limit the supply of medicines to individual pharmacists on a quota basis. This could give rise to supply limitations driven by the desire to exclude parallel trade, but which do not reflect local or individual requirements based on patient needs. In the view of this association, there could be increases in demand from pharmacists, dictated by changes in prescribing patterns or policies, and in such circumstances quotas could lead to supply shortages.

2.5.5. Arrangements between Originator Companies and API Producers

(819) One important component of any medicine is the active pharmaceutical ingredient (API). An API is the substance which provides the therapeutic effect of a medicinal product. A medicinal product can include only one or a mixture of several APIs.

(820) In order to launch a generic product on the market, a generic company needs to have access to the API in the medicine. The generic company can choose either to produce the API itself or, alternatively, to purchase the API from a third party. A number of companies specialise in producing APIs for the pharmaceutical sector, which they offer to both originator and generic companies.

(821) As supplying API is one of the upstream links in the supply chain of pharmaceutical companies, the generic companies were asked whether, over the period 2000 – 2007, they had suffered from any discontinuation of supply from an API producer, e.g. following acquisition of the API producer by an originator company or due to an agreement (e.g. patent settlement or licence) between an originator company and the API producer.

(822) Only six of the generic companies questioned had been in such a situation on one or more occasions. Four of them responded that they had encountered a discontinuation of supply following acquisition of the API producer by an originator company. The

same number (not the same companies) responded that a settlement with an originator company had led an API producer not to commence supplying the agreed API or to cease its supply to their company. Finally, one generic company responded that one API producer had terminated its supply after an originator company had acquired a stake in it.

(823) The Commission also asked originator companies whether they had acquired control over an API producer in the period 2000 – 2007 and, if so, what their reasons for the acquisition had been. Only four of the originator companies questioned responded that they had acquired an API producer. These companies gave several different underlying reasons for the acquisitions, such as the need to secure continuity of supply, the ability to enter new markets and the ability to expand their own business in the market for production of APIs. Furthermore, the Commission's services asked the originator companies whether the acquisition had led to discontinuation of supply from the API producer to generic companies. Only one of the four originator companies admitted that an acquisition had an impact on the supply to generic companies.

(824) A number of other originator companies responded that they had acquired companies producing APIs but where this was not considered to be their core business. All these originator companies explained that their acquisition(s) had not been based on the API production activity of the company acquired.

(825) Furthermore, originator companies were asked whether, during the period 2000 – 2007, they had concluded agreements (e.g. patent settlements or licences) or had contacts with API producers which had led to discontinuation of the supply of an API from that producer to generic companies. Two companies responded that they had concluded settlement agreements with API producers which had subsequently led the API producer to cease the supply to generic companies. According to both, the API producer had infringed the originator company’s patent(s) and the settlement concluded the parties’ litigation.

Summary

The inquiry's preliminary findings confirm that interventions by originator companies before national authorities other than patent offices occurred in a significant number of cases. Originator companies intervened when generic companies applied for marketing authorisation and pricing/reimbursement status for their medicines. Originator companies claimed in their interventions that generic products were less safe, less effective and/or of inferior quality. They also argued that marketing authorisations and/or obtaining pricing or reimbursement status could violate their patent rights, even though marketing authorisation bodies may not take this argument into account. The interventions by originator companies often focused on a few high-turnover products.

When the patent-related matters resulted in litigation, the claims of the originator companies were upheld in only 2% of the cases, suggesting that the arguments submitted against the generic medicine could not be substantiated. Originator companies had also a low success record in cases concerning data exclusivity.

Intervention and litigation by originator companies interfering in administrative proceedings for generic medicines can lead to delays to generic market entry. In relation to a sample that was investigated in depth, it appears that marketing authorisations were granted on average 4 months later in cases in which an intervention took place. Originator companies believe they have generated significant additional revenues as a result of such practices.

The inquiry's preliminary finding is that originator companies spent on average 23% of their turnover on marketing and promotion activities for their products. As part of their commercial strategies, originator companies do not simply promote their own medicines to doctors and other healthcare professionals. There are also indications of practices seeking to put into question the quality of generic medicines.

Finally, there are indications that originator companies attempt to exercise influence over the distribution channel (wholesalers) and supply sources for the active pharmaceutical ingredients needed to produce the medicines in question.

Direct-to-pharmacy (DTP) distribution is a new trend in the distribution of medicines. In DTP distribution, the pharmaceutical company sells the medicines directly to the pharmacists. According to some stakeholders, this model could eventually lead to less competition at the wholesale level and possibly render it more difficult for smaller originator companies and generic companies to enter the market.

2.6. Life Cycle Strategies for Follow-on Products

2.6.1. Introduction

(826) The purpose of this section is to analyse the use of so-called "second generation" or "follow-on products" by originator companies.

(827) Originator companies often launch second generation or follow-on products shortly before loss of exclusivity of the first generation product, which is sometimes combined with the withdrawal of the initial product from the market. This is accompanied by intensive marketing efforts, such as detailing, in order to switch a substantial part of prescriptions, and patients to the new product.[353] Thus, when the initial product loses exclusivity, generic companies may not rely on their generic versions being prescribed and their viability is threatened. Such a life cycle strategy goes beyond the pure patent strategies and will in addition involve marketing and promotion strategies, as well as other practices discussed in previous chapters.[354]

(828) For the purpose of the following analyses, second generation or follow-on products are defined as products that result from follow-up R&D essentially based on that of an existing product ("first product") and have essentially a similar mode of action. These second products may have the same INN as the first product (e.g. second products involving *inter alia* new formulations, crystalline forms, particle sizes or medical uses) or a different one (e.g. combinations, individual stereoisomers separated from mixtures or the identification of metabolites of an existing INN).

(829) This section will first give a general overview of the rationale of follow-on products and their market relevance before examining mechanisms of switching from the first to the second generation products including patenting of these products. This will be followed by an examination of timing and economic considerations concerning these switches. The analysis will then turn to practices employed by originator companies to facilitate switches of patients from the first to the second generation product. The section will conclude by looking at the effects of such switches on generic entry.

2.6.2. Rationale of Follow-on Products

(830) Several generic companies and their industry associations and consumer associations have strongly criticised life cycle strategies leading to second generation products. They refer to this practice as "evergreening" and have raised concerns about their effects. They claim that some of the new products show little if any innovation and limited if any additional benefits, and that they serve primarily to retain the revenue streams of the first generation product.

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353 For further details see Chapter B.1.2.

354 For further details see Chapters C.2.1. and C.3.1.

(831) Originator companies, on the other hand, argue that even small incremental innovation within a product may result in products that satisfy differentiated needs of a consumer, such as the need to enhance compliance (e.g. once daily, once weekly administration), to facilitate administration of the pharmaceutical (e.g. through tablets that are easier to swallow or transdermal patches) or to facilitate administration in conjunction with another substance, as in the case of added vitamins or combination products.

(832) Yet, the circumstances typically associated with the introduction of follow-on products to the market suggest that the latter often form part of originator companies' broader life cycle strategy attempting to delay or prevent generic erosion due to the loss of exclusivity of the first product. Most notably, switches to follow-on products frequently occur when generic competition is imminent.

(833) Strategies for launching follow-on products can in some cases be rather aimed at preventing generic companies entering the market than actually protecting a new innovative product, as is suggested by the following quote of an originator company:

> *"[Our second generation product] represents the most effective strategic initiative to counter generic [versions of the first generation product] […]"*

(834) Another originator company highlighted the purpose of launching its second generation product in the following way:

> *"[Our second generation product] is a new formulation of [our first generation product], launched initially as a line extension to maintain the growth momentum of the product."*

(835) A statement by a national authority corroborates this:

> *"In our point of view the originators companies have […] developed several strategies to create barriers to the fully [sic] development of generics. The most common of these strategies are: […] the development of new formulations or new combinations of active substances already on the market; the development of new active substances that are isomers from the already approved and reimbursed ones."*

(836) Similarly, a wholesaler considered that:

> *"Originator companies do occasionally introduce a second generation patent in an attempt to forestall the introduction of generic products. […]"*

2.6.3. Market Relevance of Follow-on Products and Mechanisms for Product Switches

(837) The data used in this section was gathered by focussing on second generation products as defined above and which are marketed within the three largest national markets in the EU: France, Germany and the UK. Furthermore the collection of data was restricted to switches from first to second generation products where at least one of the products was included within the 219 INNs on which in-depth analysis was carried out in the sector inquiry. Originator companies were asked to complement the previously submitted data if it turned out that only one of the products was in the INN list.

(838) It should be noted that the originator and generic companies questioned did not have the same view as to what products could be considered as second generation products. The originator companies reported 38 INNs whereas the generic companies identified 72 INNs for which a second generation product has been developed. The overlap between these two universes consisted of 22 INNs (hereafter called the "FP22 universe") meaning that in total 88 INNs (hereafter called the "FP88 universe") were reported for which a second generation product has been developed. It is noteworthy that some widely published examples of second generation products were not reported by the originator companies despite the fact that the first or second generation product was in the INN list.

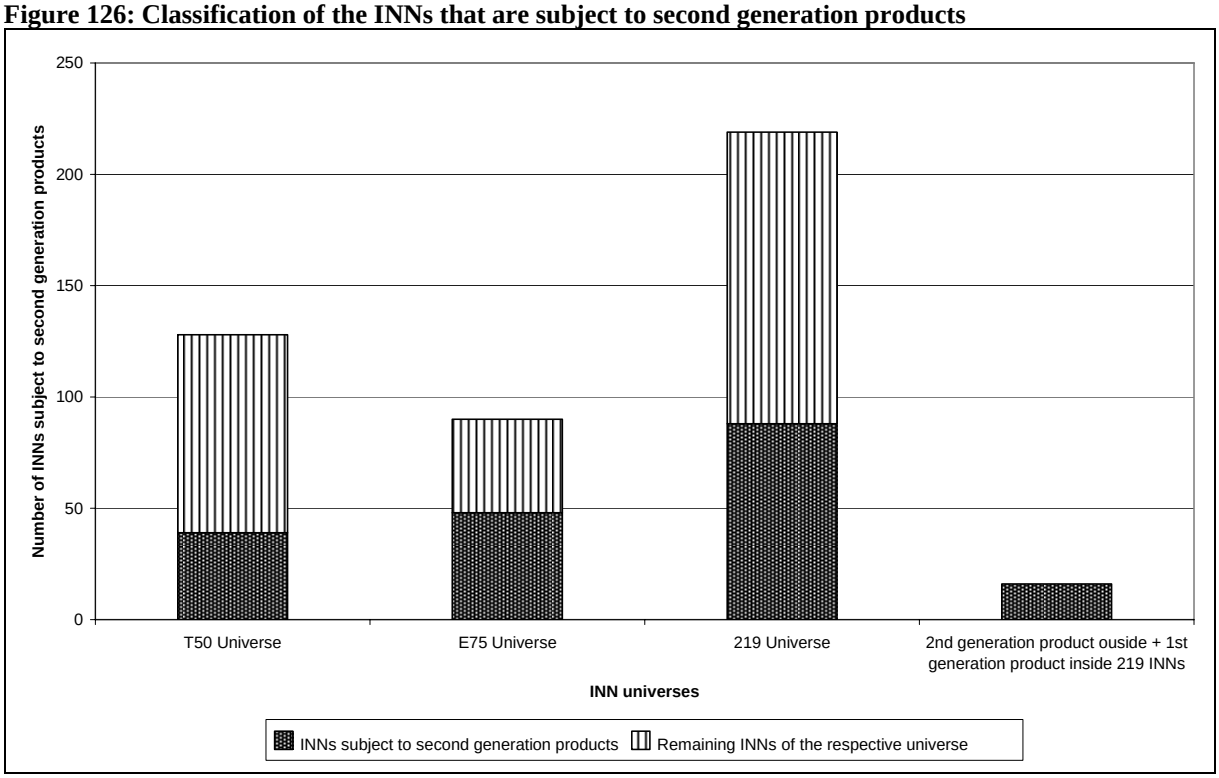
(839) The scope of the data analysis of the section on market relevance of the follow-on products and of the originator companies' practices facilitating product switches uses the FP88 universe, while the section on patenting as well as the one on the timing of product switches uses, due to data constraints, the FP22 universe. In this context, the FP22 universe constitutes a conservative sample, as it comprises cases of product switches recognised by both the originator and generic companies.

2.6.3.1. Market Relevance of Follow-on Products

(840) The FP88 universe represents 40.1% of the 219 INNs covered by the sector inquiry. It is also noteworthy that 39 INNs of the FP88 universe are part of the top selling "T50 list" (i.e. 30.4%). In addition, 48 INNs of the FP88 universe also fall within the E75 scope which represents a list of top selling products which lost exclusivity in the period 2000 – 2007 (i.e. 53.3%). For 12 INNs of the FP88 universe, the second generation INN fell outside the scope of the 219 INNs covered by the sector inquiry when the first generation INN fell inside that scope. Figure 126 gives an overview of these classifications:

(841) It is also interesting to see that for 24 INNs out of the FP88 universe, the second generation product creates a new INN compared to the first product. For the other INNs, the first and second generation products refer to the same INN. Within the 24 instances where a change in INN could be detected, in 18 cases the new INN was a combination, in three cases a single enantiomer and in the remaining three cases a metabolite. For two other reported INNs, on top of the previously mentioned 24 instances, the second generation product was characterised as a new salt form of an existing INN.

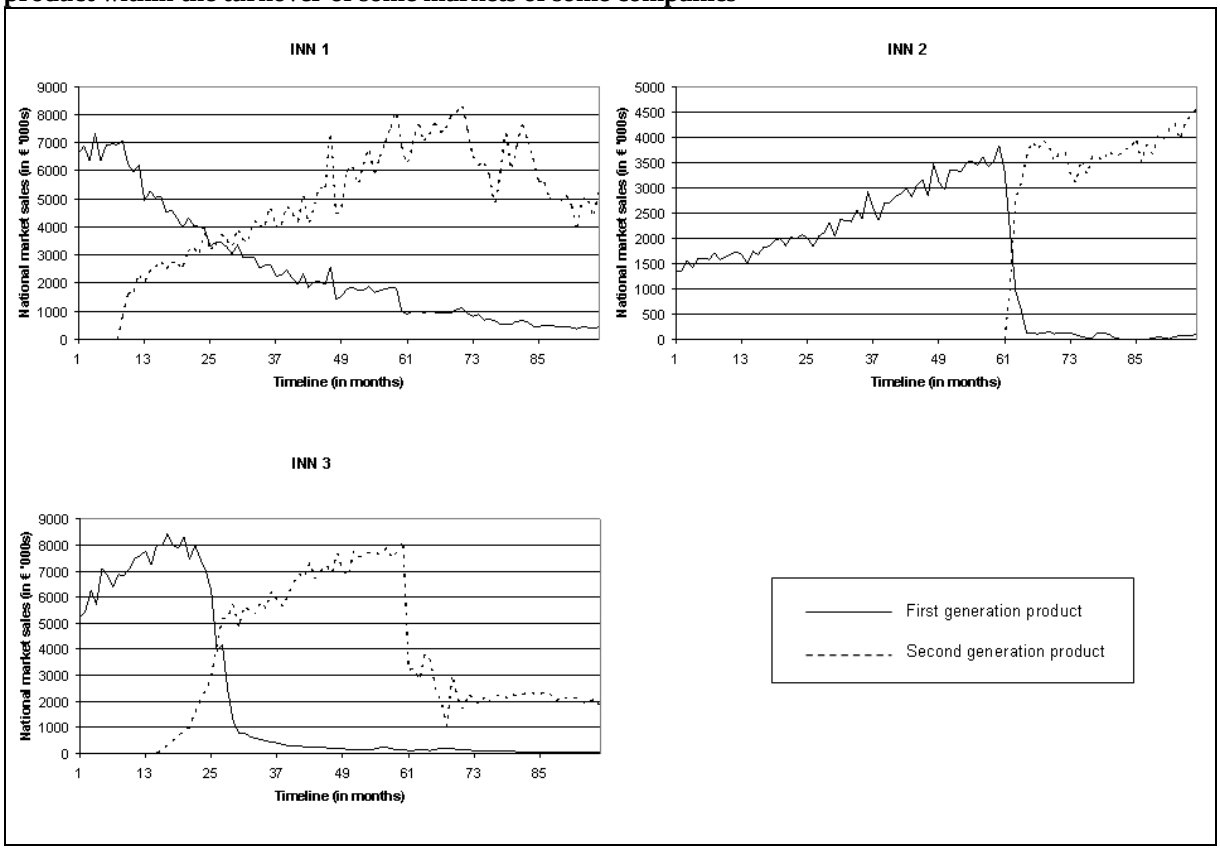
Figure 126: Classification of the INNs that are subject to second generation products



Source: Pharmaceutical Sector Inquiry

(842) Often, the second generation products launched by originator companies relate to those first generation products that constitute a big part of a company's turnover. An example of a successful way of switching patients to the second generation products shown by the sales of a few high turnover INNs from the FP22 universe have been represented below in Figure 127. The three graphs represent three different INNs in three different geographical markets whereby month 1 stands for January 2000 and month 97 for December 2007. It can be seen that patient switching was successful as the sales of the first product decreases and is replaced by the sales of the second generation product within a fairly short timeframe. For the three examples, the turnover of the second generation product represents between 10 and 20% of the company's turnover.

Figure 127: Examples of how the sales of a second generation product take over the part of the first product within the turnover of some markets of some companies



Source: Pharmaceutical Sector Inquiry (based on IMS data)

(843) In conclusion, for many commercially important INNs, second generation products come onto the market. In this context patient switching is a major challenge for the originator company to preserve a high turnover.

2.6.3.2. Mechanism for Product Switches

(844) Where a company takes the strategic decision to counter the loss of exclusivity of the first product with a launch of a second generation product, it will need to engage in a series of activities, spanning from the underlying incremental R&D to the final launch of the follow-on product, and even beyond.

(845) Patenting of originator incremental innovation is a very important, although not the only stepping stone for this strategy. But it is essential, as it will provide for the necessary exclusivity of the follow-on product.[355] To do so, the timing of such patenting must ensure that the exclusivity of the follow-on product will extend beyond the protection period of the first product. In addition, patent clusters may be created to confront generic competition to the follow-on product, and possibly also the first product to ensure that the generic companies do not enter prematurely.

355 In addition, data exclusivity may be granted for the second-generation product.

(846) Next stage is the product development, the course and extent of which may diverge significantly depending on whether new clinical trials will be necessary or not in order to obtain the marketing authorisation.

(847) Timing the launch of a follow-on product is crucial for originator companies. If cheaper, generic versions of the first product come on the market before or simultaneously with the switch to the follow-on product, the originator company may incur considerable value losses both in terms of smaller volumes and reduced prices. Therefore, it is of utmost importance for the originator company to bring the follow-on product on the market before the first product effectively loses exclusivity.

(848) This means that very often accompanying measures are taken by the originator company to facilitate the switch. Such measures may typically aim at effective channelling of demand from the first product to the follow-on product, but may also attempt to delay or prevent generic entry for the sensitive period of the product switch.

2.6.3.2.1. Patenting for Second Generation Products

(849) In order to preserve the revenue streams from the first product, the second generation product needs to be protected by the same kind of exclusivity. This subsection will look at patent exclusivity for incremental innovation, while the issue of data exclusivity will be touched upon in the subsequent one.

(850) In any event, efficient patent protection is crucial in order to maintain exclusivity of the second generation product. This means that an originator company will have to file patent applications early enough to ensure continuous exclusivity of its products but also, as in the case of the first product, to create several layers of patent protection making it difficult for generic companies to develop a generic version of the follow-on product without infringing any patent.[356]

(851) As demonstrated earlier,[357] originator companies continue patenting throughout the life cycle of the first product. Moreover, the data gathered in the sector inquiry shows that patenting activity often re-intensifies in the period close to the loss of exclusivity. Such patents may be used to buttress the exclusivity of the first product throughout the base patent term, and possibly even beyond, as well as to protect a possible follow-on product.

(852) Patent protection for a second generation product may be sought through the filing of either new primary patent applications, e.g. for combinations, or through the filing of a secondary patent application relating to the first product, e.g. a reformulation, or different dosage regimes.

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356 For a more detailed discussion on patent clusters see above Chapter C.2.1.

357 For further details see Chapter C.1.2.

(853) Originator companies claim that second generation products reflect incremental innovation. Most originator companies with second generation products asked within the framework of the sector inquiry stated that these products were developed to address unmet patient needs and offered clinical benefits vis-à-vis the old product. If this was not the case, they argued, patients and doctors could not be convinced to use them. This is summarised most comprehensively by the following answer of an originator company:

> *"[…] "Second pharmaceutical products" have to meet the expectation of the customers and thereby heavily compete with the "first pharmaceutical product" and/or its generic competitors. Consequently, it is ultimately the customer who makes the choice between the existing products, its generic equivalents or "second pharmaceutical products". The latter will fail if they do not add therapeutic advantage."*

(854) At the same time, concerning a second generation formulation product, another originator underlined its potentially impeding effect for generics:

> *"While this formulation will not prevent the entry of generics into the […] market (once exclusivity for the first product has expired), it is expected to protect a good portion of the business for several reasons:*
>
> *a) The formulation technology and manufacturing process are patented [...], and [our company] has the exclusive license to this technology for use in [this product category]. […] Again these elements will not prevent a generic to enter the market but will make it less attractive."*

(855) In this context, the European consumer association, BEUC, claimed to be:

> *"[…] very much concerned by the phenomenon of so-called "evergreening", which describes a specific tactic used by originators to extend patents by seeking to obtain as many patents as possible during the development of the product and the marketing phase, and to obtain a patent extension for new manufacturing processes, new coating and new uses of established products. […] Originators can also slightly change an active ingredient and present an old medicine as a new product and register a new patent. We consider that these practices are anticompetitive and prevent generics entry into the market means. They also incur higher health care expenditures and/or higher prices for consumers."*

(856) Equally, when asked about their perceptions of originator companies' patent strategies, a number of national authorities replied that they considered the way originator companies used patents for second generation products as part of a strategy to create obstacles to market entry by generics, as illustrated by the following quote of one such authority:

> *"In fact, there are special strategies linked to patents, which can constitute barriers to entry for generics. A quick legal research allowed [us] to supply a few examples:*
>
> *- Modification of composition of the pharmaceutical specialty*
>
> *- Extension of therapeutic indication […]*
>
> *- launching of an enantiomer*
>
> *- registering a patent as regards a new formulation, which is presented as more efficient."*

2.6.3.2.2. Development and Marketing Authorisations of Follow-on Products

(857) Once a patent basis is established for follow-on products, the originator companies will proceed with the development of the compound with a view to marketing it. Follow-on products are typically based on incremental innovation, and their developments may often take less time to come to the market than the average.

(858) Similarly, one wholesaler pointed to the timing in relation to follow-on products:

> *"[…] originator companies have attempted to reduce the impact of pending generic competition by introducing apparent last minute improvements to products, or by changing the galenic form of their molecule."*

(859) In this context it has to be noted that changes in the strength, pharmaceutical form, administration routes, presentations, as well as any variations and extensions will not be given an extension of the data exclusivity period as the corresponding marketing authorisations will fall under the global marketing authorisation whereby only the initial eight year data exclusivity period will count.[358] Therefore, if a second generation product would be based on any of the previously mentioned changes, in order to preserve exclusivity the originator company would have to seek protection via the patent system as no extension of the data exclusivity period would be granted.

(860) When second generation products rely on a new INN (e.g. via combination, single enantiomer or metabolite), new clinical trials would in principle be necessary. This would on the one hand imply a longer product development as compared to products that fall under a global marketing authorisation. On the other hand, the originator company will normally enjoy a new data exclusivity period. Hence, such follow-on products would be able to find protection via data exclusivity as well as via the patent system.

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358 Directive 2001/83/EC Art 6 as amended by Directive 2004/27/EC Art. 1.5 (a).

2.6.3.3. Timing and Economic Considerations of Product Switches

(861) Irrespective of the type of patent protecting a second generation product, the patent will usually provide the company in question with further patent protection in addition to the exclusivity enjoyed for the first product, provided that the company can switch patients from the old product to the new one. This would allow the originator company to maintain the market share by retaining comparable volume levels as well as preventing a price decline which usually occur with generic market entry. Such a switch of patients to second generation products may, however, not be easy if generic versions of the old product have already entered the market before or simultaneously with the follow-on product.[359] Where a clear-cut therapeutic advantage is either not apparent or cannot be communicated, the success of the follow-on product might be constrained by more cost-effective generics.

(862) Hence, once generics are on the market, it becomes more difficult to switch patients to second generation products, as observed by an originator company:

> *"If [generics] come together with or prior to [second generation product] the switch rate is dramatically reduced. […] Once [generics] come in it becomes more difficult to get switches from [old original product]"*

(863) In this context the importance of the price level – and the fall of prices following generic entry is – illustrated by the following remark by a generic company:

> *"A pre-patent expiry entry of the second generation product enables the Innovator to switch patients in a pricing climate where the first generation product price is stable. The second generation product may be priced at or slightly below the first product, and positioned as being 'better and similarly cost effective'. If the prescriber is prepared to accept this Innovator argument and switch prescribing, he is unlikely to go back subsequently to the first generation product when a generic is available. If the second generation product appears after patent expiry of the original product, then the pricing climate will be different. The generic will have caused the market price to fall, and thus to switch to the newer product will likely incur a cost penalty to the physician budget, something he is likely to resist unless the second generation is a compellingly better product. This is seldom if ever the case."*

(864) There are several possible reasons why the switch of patients to a new originator product is more difficult once generic versions of the old product are used. Some of the explanations derive from obligations by the regulatory framework, generic substitution by physicians or prescription inertia of physicians. The latter is suggested by the following quote of an originator company:

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[359] For further details see Subsection C.2.5.3.2.

> *"[…] not all physicians are equally amenable to switch programs. In general the [therapeutic class] market is a slow switch market and physicians do not see the (our) urgency for actively switching their patients. […] getting general agreement is "easy", actual and immediate behavioural changes however are hard to achieve."*

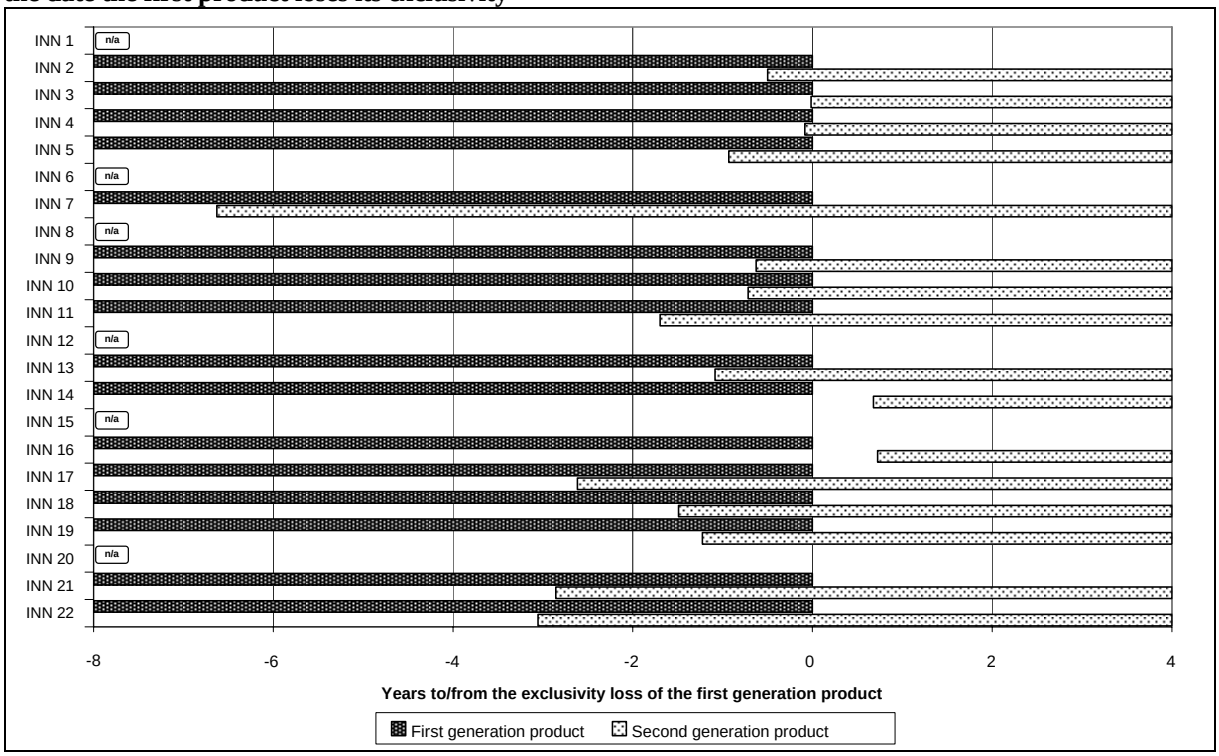
(865) Originator companies are aware of their competitive advantage if they manage to switch patients to the second generation product before loss of exclusivity for the first product:

> *"The launch of [our second generation product] is a challenge, not experienced until now, as generics firms, […] press onto the market with all force and as we have to fear the loss of our patent […]. This means each patient that is not switched quickly enough to [our second generation product] is forever lost to the generics. Once the patient is switched to [our second generation product] the physician does not have to, cannot and will not switch him to a generic, and what is more important: the pharmacist cannot substitute!! "*

(866) The above quotes also indicate that, to optimise the product switch, originator companies need to flank the launch with significant accompanying activities aiming at adapting the prescribing behaviour to the benefit of the follow-on product. More generally, the need to secure the switch to the new, follow-on product before the onset of generic versions of the old one may prompt the originator companies to resort to other life cycle instruments. This would especially be the case where generic entry could pre-date, or coincide with the launch of the follow-on product. Practices that originator companies resort to in order to facilitate product switches in the critical time span sensitive to generic entry ("bridging strategy") will be examined further below.

(867) The actual timing of second generation product launches seems to confirm the originator companies' need to launch before generic entry. An overview of the above-mentioned FP22 universe regarding the launch date of the second generation product in comparison with the date the first product loses its exclusivity has been given in Figure 128 below. The dark grey bar represents the exclusivity period of the first product whereby at time zero loss of exclusivity occurs. The light grey bar shows when the second generation product has been launched.

Figure 128: Comparison for the FP22 universe of the launch date of the second generation product with the date the first product loses its exclusivity[360]



Source: Pharmaceutical Sector Inquiry

(868) For the INNs on which data were submitted, Figure 128 shows that for at least ten of the INNs, the launch date of the second generation product was close to the date of loss of exclusivity of the first product. The average time a second generation product would be launched ahead of loss of exclusivity of the first product is around one year and five months according to the reported data. For at least three of these ten INNs, the first products were withdrawn shortly (in most cases a few months) after the launch of the second generation products (this is not depicted in Figure 128).

2.6.3.4. Practices Employed by Originator Companies to Facilitate the Switch

(869) In view of the above, it is clear that the timing of the launch of generics and of next generation originator products for the same indication becomes crucial for the market success of both originator companies and generic companies. This further emphasizes that delays in the crucial market introduction phase of generic medicines can make or break a business case.

(870) Where a company encounters difficulties to switch from a first to a second generation product, it may need to resort to its tool-box to delay generic entry until the switch took place. A clear case of bridging the potential gap between patent expiry of an old

360 Where more than one of the three markets concerned was reported for a given INN, the average time of launch date and exclusivity has been calculated. In other cases only one market was reported.

product and the effort to switch patients to the new generation product by delaying market entry of generic versions of the old product is the AstraZeneca case, decided by the Commission in 2005.[361] Here, the originator company AstraZeneca (AZ) employed several tactics in order to prevent entry of generic omeprazole when its patent for the relevant original product Losec was about to expire. This included instigating the withdrawal of the market authorisation for AZ's own old product, thereby removing the reference pharmaceutical, which generics needed at the time to obtain their market authorisation. This strategy succeeded in part in certain countries in keeping generics off the market for an additional period during which the company would aim at switching patients from the first generation product omeprazole to its patent protected second generation product esomeprazole:

> *"Indeed, the primary aim of AZ's Losec Post Patent Strategy is to facilitate the switch from its omeprazole based products to its esomeprazole based products at as high a reimbursement price as possible, in particular through exclusion of generic omeprazole prior to the launch of the new generation product. This emerges clearly from AZ's national strategy documents for Denmark, Norway and Sweden".*[362]

(871) The underlying strategy was confirmed by the following quote from an internal document of AstraZeneca for the Danish market, cited in the decision, pointing out the necessity to block generic entry until a successful switch has occurred:

> *"Total omeprazole market share will probably be quite stable, but a big part of the Losec market share will most likely be taken over by generics in 2000-2001. [Esomeprazole] is scheduled for launch August 2000. It will be very difficult to launch [esomeprazole] successfully, since Astra by this time will not be the market leader and the price gap between [esomeprazole] and generics will be large…"* [363]

(872) In this context the sector inquiry sought to establish whether originator companies involved in the practice of such life cycle strategies simultaneously used other strategies to delay generic entry such as interventions at regulatory bodies and litigation or expressing concerns about generic versions of their products. This would be of particular interest if the companies apply a so-called "bridging strategy", as in the AstraZeneca case, if the life cycle of the original product comes to an end before the successful launch of a new generation product.

(873) As outlined below in Chapter C.2.7., there is a high correlation between the different strategies and practices as originator companies combine the use of different instruments in their "tool-box" for the same product.

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361 Commission Decision of 15 June 2005 (Case COMP/A. 37.507/F3 - AstraZeneca); currently under appeal currently pending before the Court of First Instance (T-321/05).

362 Commission Decision of 15 June 2005 (Case COMP/A. 37.507/F3 - AstraZeneca) para. 532.

363 Commission Decision of 15 June 2005 (Case COMP/A. 37.507/F3 - AstraZeneca) para. 299.

Marketing of the first and follow-on product

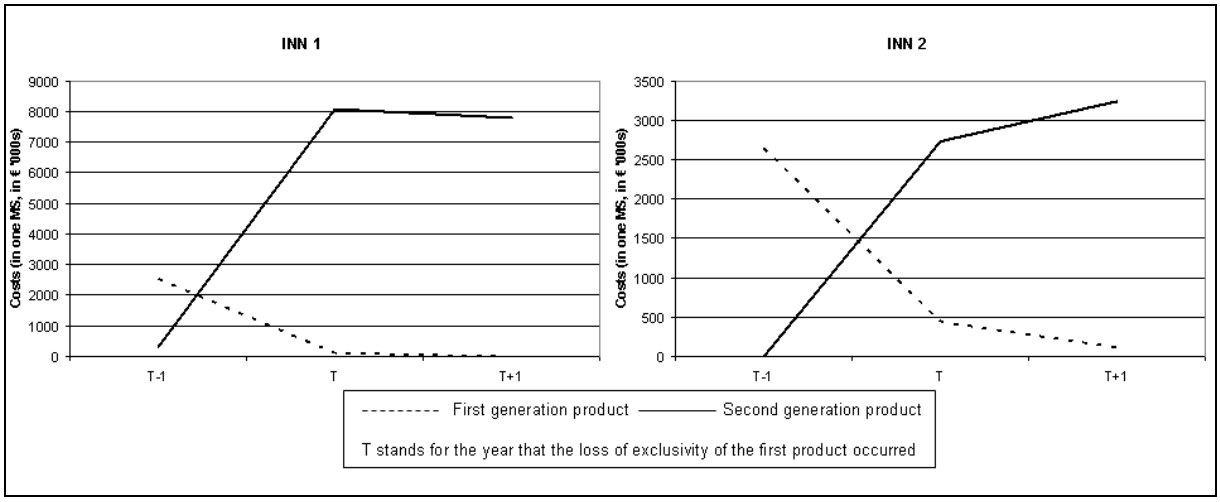
(874) Switching patients from a certain product to a second generation product does not happen automatically and needs a lot of marketing and promotion efforts. Especially a strong sales force will be needed in order to convince the physicians of the merits of the follow-on product and to switch their prescription behaviour towards the second generation product.

(875) When asked about the means used to confront generic products eroding second pharmaceutical products most originator companies highlighted the necessity of bringing the advantages of second generation products to the attention of patients and doctors, in particular clinical benefits or the satisfaction of unmet patient needs, e.g. ensuring patient compliance or facilitating administration of the medicine. Thus the companies emphasised substantial improvement of the second generation product vis-à-vis the old one. However, when some originator companies that had launched second generation products were requested by the Commission services to submit separate information on their marketing expenses for their first products and for the second generation products many of those companies replied that they were not able to split the marketing costs of the first products from those of the second generation products as is illustrated by the following quote:

> *"[Our company] does not record its marketing costs separately for the different products sold under the […] brand. Marketing costs are only recorded for the brand as a whole."*

(876) The analysis of the information that was submitted by some originator companies showed a decrease regarding marketing and promotion costs for the products that were about to lose exclusivity. Especially in the year before loss of exclusivity of the first product, one could see a switch of the marketing and promotion budget towards the second generation product. Two real-life examples of switching marketing and promotion budgets from the first to the second generation budget can be seen in Figure 129 below whereby year T stands for the year that loss of exclusivity of the first product occurs.

Figure 129: Marketing and promotion costs for first and second generation products for two INNs in different Member States



Source: Pharmaceutical Sector Inquiry

Litigation against generics vis-à-vis patent infringements concerning the first product

(877) Out of the 68 INNs that were subject to litigation between originator and generic companies (for details see Chapter C.2.2.), 31 INNs were among the FP88 universe of INNs that have been reported as being subject to second generation products. More specifically, more than 405 of the 698 litigation cases that have taken place between originator and generic companies dealt with an INN subject to a second generation product. The outcome of these 405 litigation cases shows similar results as the conclusions that have been drawn for the total set of 698 litigation cases (i.e. that around 60% of the outcome of the cases were in favour of the generic producer).

Withdrawals of marketing authorisations for the first product

(878) Generic companies reported that for at least nine INNs, the withdrawal of the marketing authorisation has caused problems in the past to launch the generic version. All of these INNs were among the FP88 universe of INNs that have been reported as being subject to second generation products. After a revision of Directive 2001/83/EC the withdrawal of the marketing authorisation of the reference product does not form a problem anymore for the producer of a generic version referring to it.[364]

Intervention at marketing authorisation bodies as regards generic versions of the first product

[364] See revised Art.10(1) of Directive 2001/83/EC of November 2005 stating that reference under the abridged procedure must be made to a product which "is or has been authorised."

(879) Out of the 43 INNs that were subject to pre-litigation contacts and disputes with marketing authorisation bodies (for details see Chapter C.2.5.), 22 INNs were among the FP88 universe of INNs that have been reported as being subject to second generation products. More specifically, 97 of the 195 reported intervention cases that have taken place between an originator company and a marketing authorisation body dealt with an INN subject to a second generation product.

Intervention at pricing/reimbursement bodies as regards generic versions of the first product

(880) The same observation can be made for intervention at pricing and reimbursement bodies where for the 19 INNs that were subject to pre-litigation contacts and disputes with pricing and reimbursement bodies (for details see Chapter C.2.5.), 11 INNs were among the FP88 universe of INNs that have been reported as being subject to second generation products. More specifically, more than 29 of the 41 reported intervention cases that have taken place between an originator company and a pricing and reimbursement body dealt with an INN subject to a second generation product.

Settlements

(881) Out of the 49 INNs that were subject to a settlement between an originator and a generic company (for details see Chapter C.2.4.), 21 INNs were among the FP88 universe of INNs that have been reported as being subject to second generation products. More specifically, more than 108 of the 207 reported settlements that have taken place between an originator and a generic company dealt with an INN subject to a second generation product.

Withdrawals of first generation products

(882) Furthermore, generic companies report that originator companies withdraw first generation products from the market and switch to second generation products. They claim that such withdrawals before generic market entry leave doctors and patients with no other choice than to switch to the second generation product. As already mentioned above three such withdrawals of first-generation products were reported among the FP22 universe after a second-generation product had been launched. These withdrawals were carried out shortly (in most cases a few months) after the launch of the second generation products and before loss of exclusivity of the first generation product.

2.6.4. Effects of follow-on product switches on generic entry

Success rate of switching in products examined

(883) In six INNs out of the FP22 universe, originator companies stated that they succeeded in switching nearly 100% of the patient base from the first to the second product. In all other cases companies claimed that they could not give percentage estimates of successfully switched patient basis, as explained illustratively by the following quote:

"[…our company] considers that it would not be possible to identify the proportion of the patient base (in terms of market volume) that switched from the first to the second product at any time in the relevant period because it is not possible to identify those patients that switched from the first to the second product as distinct from those that commenced on the second product."

Delay of generic entry into the market

(884) Switching patients to the next generation product before patent expiry may have an effect on the market entry of generic versions of the first generation product, as one generic company explained:

"In some cases we develop a product […] but by the time we come to launch […] the market has completely gone or switched to another molecule / form and our opportunity has diminished."

(885) These strategies are also reported to exist by authorities as one national pricing and reimbursement authority observed:

"There are a number of examples where the introduction of a second generation – patent protected-version of a product prior to such generic entry and at the same time withdrawal of the first (or previous) generation of that originator product from the market […] caused a shift of budgets towards the second generation patent protected, therefore no generics, […]"

(886) A similar experience was mentioned by another generic company:

"[T]he market situation was not favourable to generic versions due to the introduction of a new pharmaceutical form by the originator company, which would [make it] difficult for generics to achieve a reasonable market share."

Summary

The preliminary findings of the inquiry suggest that for 40% of the medicines in the sample selected for in depth investigation, which had lost exclusivity between 2000 and 2007, originator companies launched so called second generation/follow-on medicines. On average the launch took place one year and five months before loss of exclusivity of the first generation product. In some cases the first medicine was withdrawn from the market some months after the launch of the second generation medicine. Nearly 60% of the patent related litigation cases between originator and generic companies examined in the context of the inquiry concern the medicines that were subject to switch from first to second generation products.

In order to successfully launch a second generation medicine, originator companies undertake intensive marketing efforts with the aim of switching a substantial number of the patients to the new medicine prior to market entry of a generic version of the first generation product. If they succeed, the probability that generic companies will be able to gain a significant share of the market decreases significantly. If on the other hand generic companies enter the market before the patients are switched, originator companies have difficulties in convincing doctors to prescribe their second generation product and/or obtain a high price for the second generation product.

The launch of second generation products is often carefully prepared from a patent point of view, in order to ensure that the first generation medicine is adequately protected until the switch takes place. It also requires new patent filings for the second generation product. Whilst it is generally accepted that innovation is often achieved in incremental steps, patents relating to second generation products are sometimes criticised as weak by other stakeholders who argue that they show only a marginal (if any) improvement or additional benefit to the patients.

2.7. Cumulative Use of Practices Against Generic Companies

(887) As described earlier in this report (see Chapter C.2.1.), practically all originator companies have developed a tool-box of measures/instruments that can be used throughout the product life cycles to maximise the revenue stream from existing pharmaceutical products by delaying or dampening the effect of generic entry.

(888) While the preceding chapter focused on the various aspects of a specific life cycle strategy concerning follow-on product, this chapter presents a global picture of the overall occurrence of various instruments that originator companies may use in their strategies to hold rivals at bay. It will focus on possible cumulative use of these tools for a given INN, which will normally render generic entry more difficult than if only a single tool is used. Typically, such effects would take the form of delays in or disincentives for such entry. This is not to suggest that such conduct is invariably or often anti-competitive, since it is not the purpose of this report to classify any behaviour as anti-competitive.

(889) First, this chapter will briefly recall the main instruments/tools that originator companies may use against generic companies. Then some empirical data will be presented and, finally, the effects of possible cumulative use of several practices will be described.

2.7.1. Main Tools/Instruments Used by Originator Companies

(890) Originator companies respond in several ways in the changing competitive environment and may use one or more instruments in their tool-box to capture rents, while diminishing the entry incentive for generic companies. Their strategies are often labelled "generics defence strategies" or "brand protection strategies", but also "late life cycle management" since, as shown in previous chapters, these tools are most often deployed in the period around expiry of the primary patent. Secondary patent clusters may be efficient means to deter or prevent generic entry and are also a cornerstone of other tools, most notably litigation and settlements.

Patent Strategies: Secondary Patenting

(891) As shown in Chapter C.1.2., originator companies try to expand their patent portfolios by different means. When the main patent is about to expire, in order to stave off potential competition from other companies, originator companies may apply for a "subsequent" patent for the same initial molecules, while adding some degree of innovation. This procedure can allow companies to obtain "secondary" patents, sometimes allegedly in an attempt to create "patent clusters" as part of their commercial strategies. These secondary patents may thus be filed later than the main patent, with their life-time stretching way beyond that of the main patent. Another practice that may be used to delay generic entry into the market is filing divisional applications for the same secondary patent. This can also be used strategically to create further uncertainty and delays for new entrants. Filing patents in order to protect line extensions and second-generation products is another tool that allows originator companies to broaden their patent protection and deter or delay generic entry.

Oppositions are the flipside of secondary patenting strategies. Since a significant number of secondary patents are applied for in the period before loss of exclusivity of the main patent, the number of oppositions may reflect the impact of patent clusters, etc. on generic entry. While opposition procedures can, in principle, serve for generic companies to revoke unjustified patents, they are lengthy on average and may also be subject to delaying tactics.

Disputes/Contacts

(892) Two other tools to deter or delay the entry or expansion of generic rivals are patent-related disputes and contacts between originator and generic companies. As shown in Chapter C.2.2., these are frequent and are initiated almost exclusively by originator companies whenever a generic competitor launches or is about to launch a generic version of the originator product. In patent-related disputes, the originator company normally invokes its primary patents and claims that the generic company is infringing its valid patent rights.[365]

Patent Litigation

(893) Patent litigation can be a sign of vigorous legitimate enforcement of proprietary rights. However, litigation may be instigated with the purpose of creating obstacles to generic entry, particularly when the patent-holder knows that his chances of success in court are low. As Chapter C.2.2. illustrates, although the majority of legal actions in the EU in recent years were initiated by originator companies, the generic companies won the vast majority of them. Considering that patent litigation in the EU is time-consuming — it takes an average of three years — combined with the fact that interim injunctions are granted for an average duration of 16 months, litigating against generic companies based on claims of patent infringements can be an effective way for originator companies to delay the entry or expansion of rivals.

Patent Settlements

(894) Patent settlements to resolve claims in patent disputes or litigation are another tool which originator companies can use to delay the entry or expansion of generic rivals. As shown in Chapter C.2.4., originator companies in the EU conclude many patent settlements with generic companies. Often patent settlements limit generic entry and, in exchange, provide for a value transfer to the generic company (including "reverse payments").

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[365] Remember that the companies were asked to report only on disputes/contacts which have not (yet) led to litigation. Conversely, the data on patent litigation could include instances where disputes/contacts preceded litigation. Therefore, the total frequency of disputes/contacts may be higher than suggested in this chapter.

Interventions before Regulatory Bodies

(895) Interventions before regulatory bodies (marketing authorisation authorities and pricing and reimbursement bodies) appear to be a standard tool in originator companies' tool-box. Although contacting the health authorities may address legitimate concerns, it can also be used to delay or block the marketing authorisation or the pricing or reimbursement status of the generic product. In particular, by suggesting that the generic product is less efficient or safe or is not equivalent, raising patent infringement issues concerning the generic product in question and alleging that any decision favourable to the generic company would make the authorities liable to patent infringement damages (patent linkage), originator companies gain time and can create delays in granting marketing approval for the generic product and its entry into the market.

(896) Furthermore, these actions can be coupled with requests for interim injunctions to obtain suspension of the marketing authorisation of the generic product. Originator companies may also litigate against pricing and reimbursement bodies, claiming patent infringement, irregularities in the generic registration file or concerns about bioequivalence or non-compliance of the promotional material. However, as described in Chapter C.2.5., when the interventions before the marketing authorisation authorities lead to litigation, originator companies lose most of the cases, which suggest that the arguments submitted against the generic product could not be substantiated.

Other Interventions

(897) Questioning the reputation of generic competitors and their products can be another tool in originator companies' tool-box, particularly during the launch of a competing generic product. Originator companies sometimes send letters to doctors, hospitals and pharmacists, in particular in Member States where pharmacists have the possibility of substitution, emphasising the legal uncertainty concerning the generic product. Originator companies may also use indirect ways of influencing public opinion to place greater trust in originators' medicines than in generic medicines. Marketing campaigns can be organised with the main message that generic products are less safe, less efficient and of inferior quality.

(898) Originator companies can also make approaches downstream to wholesalers and upstream to API (active pharmaceutical ingredient) producers, with the intention of managing/limiting access by generic companies to distribution channels and sources of active ingredients.

Life Cycle Strategies

(899) Originator companies may deploy a life cycle strategy, as outlined in Chapter B.1.2., by making combined use of the various tools, an example of which was presented in Chapter C.2.6. which deals with follow-on life cycle strategies. The evidence gathered during surprise inspections confirms that the companies indeed combine legal actions and other activities in an attempt to delay generic entry, as exemplified by the following quote:

> *"We wish to exhaust all possible options and legal means to keep the [specific] generics of [compound] in [Member State] off the market."*

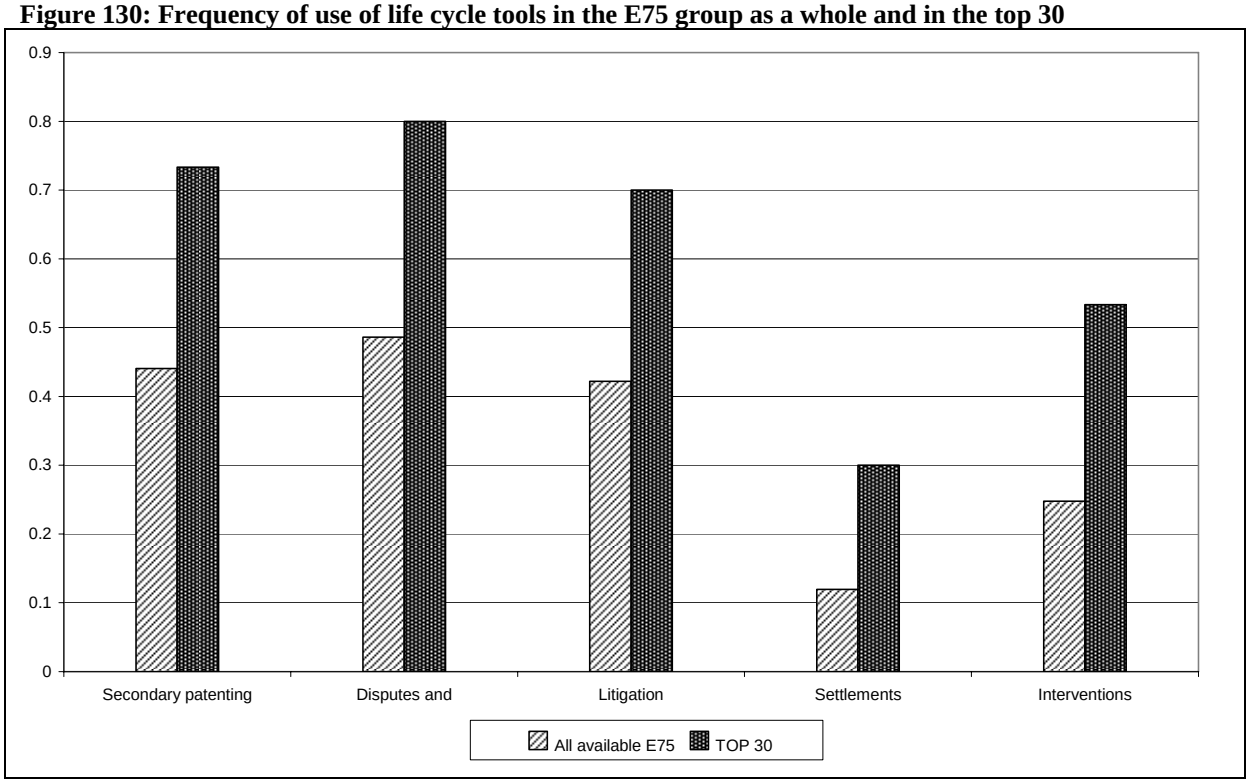
2.7.2. Empirical Data

(900) In order to gain a picture of cumulative use of the above-mentioned practices by originator companies concerning specific INNs, the occurrence of these practices in the E75 group was quantified. The E75 group comprises 128 INNs, which correspond to the 75 top-selling INNs that faced loss of exclusivity in three Member States (France, Germany and the United Kingdom) over the period from 2000 – 2007 and are thus best suited for examination of use of the tool-box throughout the entire product life cycle. The same analysis was conducted on a narrower sample of the top 30 best selling E75 INNs during the period 2000-2007 (hereinafter referred to as the "top 30").

(901) For the purposes of this exercise, the practices employed by originator companies have been classified into the following five blocks: Tool 1, entitled "secondary patenting", covers use of secondary patents. This tool was considered to be used whenever the number of secondary patents per INN exceeded the median number of secondary patents per INN within the E75 group. Moreover, this selection very often coincided with opposition proceedings lodged by generic companies against originator companies' patents. Tool 2 consists of patent-related disputes and contacts and was considered to be used whenever the available data showed at least one contact or dispute related to a specific INN. Tool 3 covers patent litigation, tool 4 patent settlements and tool 5 interventions before or against the national health authorities (marketing authorisation authorities and pricing and reimbursement bodies) and wholesalers. These three were deemed to be used whenever at least one occurrence per block has been recorded. In the case of settlements, the selection was limited to value transfers from an originator to a generic company or other circumstances that may have an influence on generic entry.

(902) Taking into account the E75 list and measuring the use of life cycle tools per INN, Figure 130 demonstrates that for 53, or almost half, of the INNs analysed the originator companies were involved in patent-related disputes and contacts with generic companies, whereas secondary patenting and patent litigation were employed in connection with more than 40% of the INNs. Actions were brought on 25% of the INNs and settlements reached on 12%. Comparison of use of the corresponding tools on the top 30 and E75 INNs shows a strong increase in the frequency of use of all five categories. Use of secondary patenting, disputes and litigation almost doubled for the top 30. Even more importantly, use of settlements increased by 18 percentage points and use of actions by 28 percentage points, in both cases more than double the E75 average.

Figure 130: Frequency of use of life cycle tools in the E75 group as a whole and in the top 30

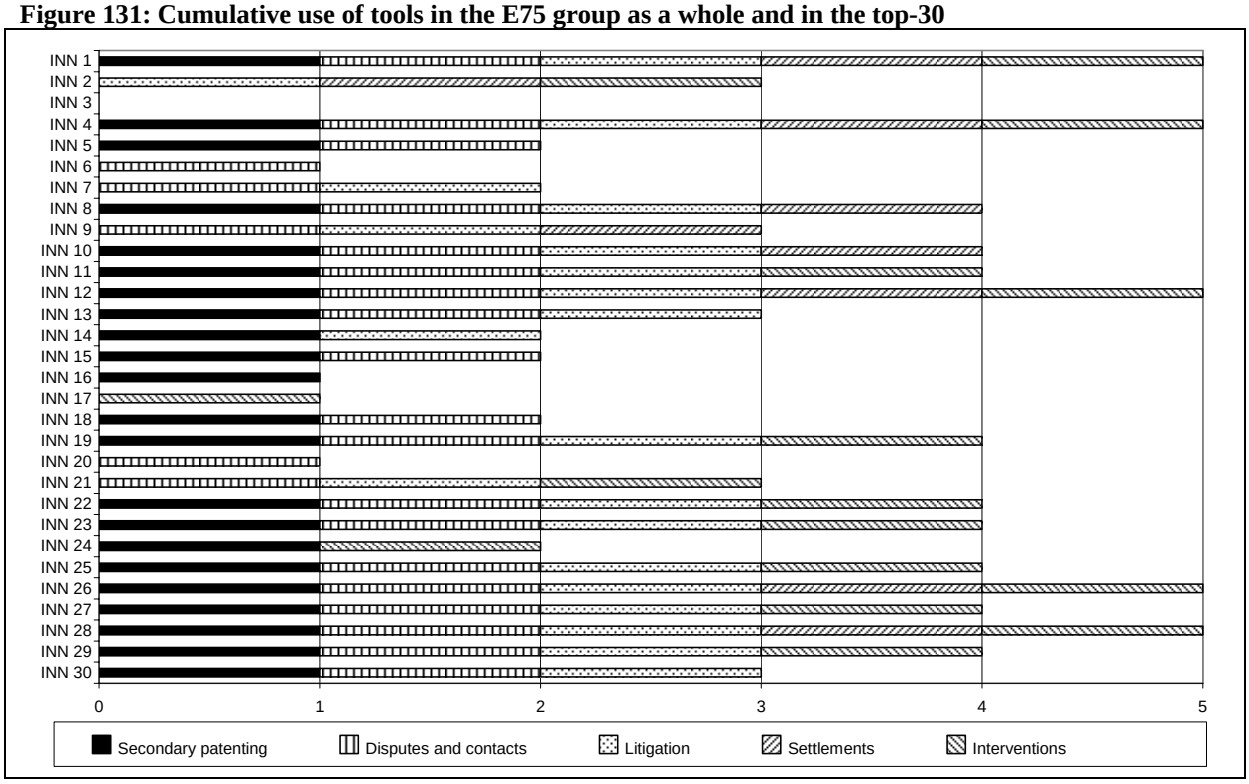


Source: Pharmaceutical Sector Inquiry

(903) Figure 131 shows the cumulative use by originator companies of the different tools which could possibly delay generic entry on the top 30 INNs (in random order). There was only one of the top 30 INNs for which none of the life cycle tools was used. On the other hand, 25 INNs (or 83%) gave rise to use of at least two instruments. For more than half of the INNs, originator companies used a combination of at least three tools, whereas for five of the 30 INNs (or 16%) combined use was made of all five life cycle instruments against generic companies.

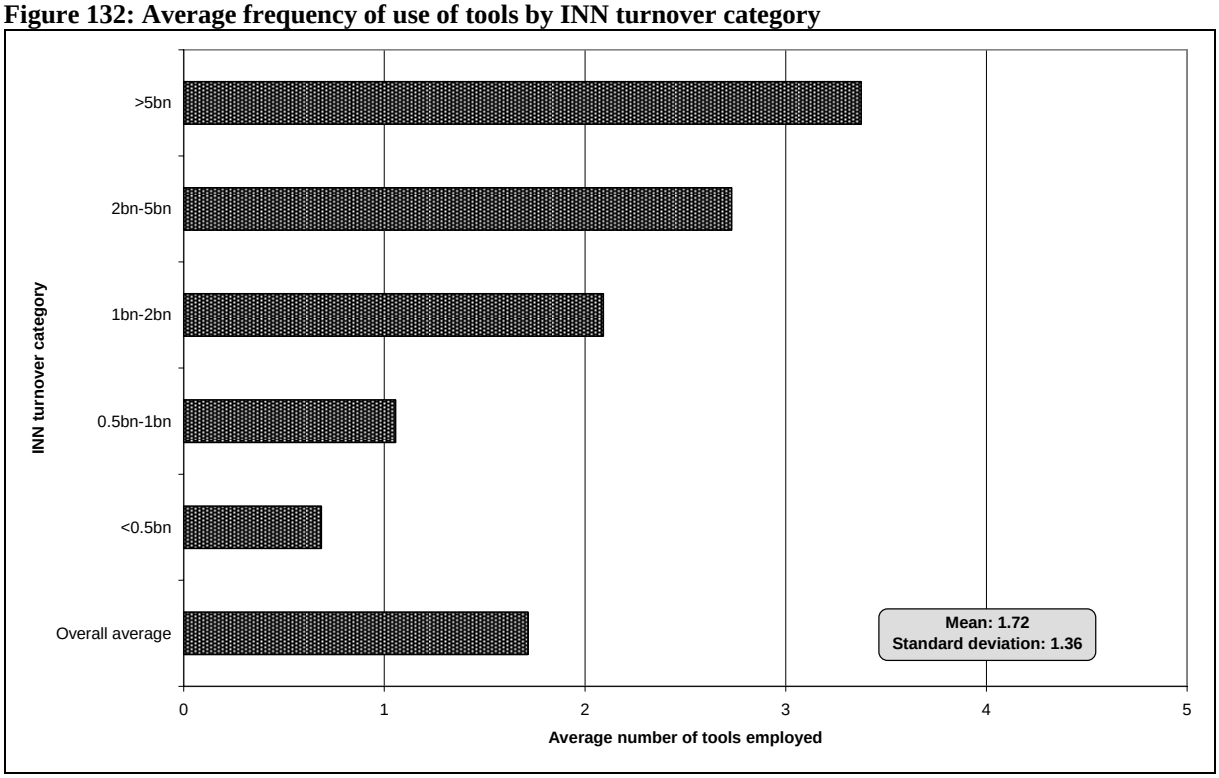
(904) Figure 132 shows that originator companies resort to broader and more intensive use of life cycle tools for INNs generating higher revenue. Based on their aggregate 2000-2007 turnover, the INNs were ranked in five categories: > € 5 billion, € 2 billion-€ 5 billion, € 1 billion-€ 2 billion, € 0.5 billion-€ 1 billion and < € 0.5 billion. The average frequency of use of life cycle tools was then calculated by category. The analysis shows a consistent and linear increase in use of the five life cycle tools as the turnover category increases. In the lowest turnover categories (< € 0.5 billion), reports of use of life cycle tools are rare, with around 0.7 occurrences per INN. In the next category (€ 0.5 billion-€ 1 billion), the utilisation rate stands at one tool per INN and is still well below the average of 1.7 tools per E75 INN. This rate effectively doubles in the next turnover category (€ 1 billion-€ 2 billion). It then continues to progress significantly in the highest turnover categories too, with 2.7 tools per INN in the € 2 billion-€ 5 billion category, and peaks at approximately 3.4 tools per INN for the top INNs with turnover above € 5 billion.

Figure 131: Cumulative use of tools in the E75 group as a whole and in the top-30



Source: Pharmaceutical Sector Inquiry

Figure 132: Average frequency of use of tools by INN turnover category



Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

2.7.3. Effects of the Combined Use of Practices

(905) So far, the assessment of the possible effects of use of the life cycle tool-box on generic entry has been limited to an instrument-by-instrument analysis. However, the previous subsection shows that, very often, originators combine life cycle tools, be it simultaneously or successively. Moreover, the intensity of their use increases with the commercial importance of the product, which in turn goes hand in hand with the pressure, or potential, for generic entry.

(906) As the vast majority of the top-30 E75 INNs in Figure 131 show, an extensive patent position lays the foundation for using other patent tools, i.e. contacts/disputes, litigations and settlements. The patent position, in particular secondary patents, together with the originator company's overall enforcement strategy, typically decide the extent to which these tools are used upon loss of exclusivity of the base patent.

(907) An abundant broad patent portfolio may deter certain attempts at generic entry. In other cases, generic companies may opt for opposition proceedings, lodge a non-infringement declaratory action or enter at risk. As demonstrated in Chapter C.2.3., opposition rates for pharmaceutical patents are above average, and generic companies succeed in three out of four oppositions. However, as the same chapter shows, even such a favourable result for a generic company comes at a price – a delay compared to the situation without the originator company's ex post revoked patent.

(908) If other patent tools – contacts/disputes, litigation or settlements – or various interventions (relating to marketing authorisations, pricing and reimbursement, or distribution) are used simultaneously to assert the secondary patent position, this does not necessarily extend the delay in generic entry in cases of patents that are ultimately invalidated. For example, a generic company may initiate opposition proceedings and proceed with generic entry, which may give rise to disputes/contacts and litigation. The litigation procedure may be conducted simultaneously to, yet separately, from the opposition procedure (which is however not always the case, as described in Chapter C.2.3.), thereby avoiding any accumulation of delays, even more so if no interim injunction is granted.

(909) Having said this, the basic effect of multiple actions can however be that entry will tend to occur later and, more generally, the overall uncertainty will tend to be higher than in situations where only one instrument, or none, is used.

(910) In other scenarios, the delays due to simultaneous use of two or more life cycle tools could add up. For example, this would be the case if the court were to stay patent infringement/invalidity proceedings to await the outcome of opposition proceedings.

(911) Settlements are another example of likely accumulation of delays. As can be seen from the foregoing, settlements are usually preceded by filing of secondary patents, disputes/contacts, litigation and interventions (alone or in combination). If the outcome of the settlement delays generic competition, this is added to the delays due to previous steps, such as litigation.

(912) Whilst exercise of originators' statutory and other rights, be it on a stand-alone basis or by combining several instruments, could be legitimate, delays in generic entry may be harmful for consumers, as discussed in the subsequent section. This is the case in

circumstances where generic entry could be legitimately advanced in time absent the use of one or more life cycle instruments from the tool-box.

2.7.4. Possible Economic Effects of Life Cycle Tools

(913) It is generally accepted that a generic entry leads to lower prices[366] for the consumers[367]. This is also a key assumption that has to be made in order to unravel the possible economic effects of delays of generic entry resulting from the use of one or more life cycle tools as already described.

(914) In particular, the focus is on the situations in which generic entry has been delayed as compared to the possible time of legitimate generic entry absent the use of various life cycle tools. The analysis in this section will be developed on an example of patent litigation, whereby the subsequent outcome of litigation suggests that an earlier entry would not have breached the patent rights of an originator company. While the example is instrument specific, the main consequence, i.e. delay of legitimate generic entry, is a common element of all other life cycle tools, whether used in combination or on a stand alone basis. The concluding part of the analysis presented in this section should be understood as extending to other situations in which a generic entry is suspended for other reasons than patent litigation.

(915) To begin with, it is worth recalling the different contexts in which a generic entry is delayed in patent litigation. A generic entry can be delayed by either (a) an interim injunction, which specifically prohibits a generic product from sales or (b) a generic entrant's own decision not to enter at risk after the originator started litigation and is threatening damages. The latter is a matter of subjective judgement, which may be influenced by several factors, including a generic company's risk-averseness, perceived likelihood of damages, a generic company's current financial situation as well as other market opportunities on which a generic company may embark.

(916) It should be noted that such a subjective judgement may also lead to a decision to enter the market on a reduced scale. Among the generic respondents to the sector inquiry, almost a half of companies confirmed that they take an entry on a reduced-scale into consideration as one of the viable market options. In such a case, any potential damages are limited to what can be perceived as an acceptable amount that does not threaten the overall continuity of business activities. In exchange for taking the risk, a generic company is then able to establish its presence on the market. This may, in turn, put that company in a privileged position to further increase its sales, should the litigation proceedings subsequently end with a favourable outcome allowing it to remain on the market.

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366 As regards the precise quantitative impact of generic entry on prices, the reference is made to Chapter B.1.3., which, in the context of this section, can also provide a useful indication as to the likely scale of the economic effects of patent litigation.

367 For the purpose of this section, the 'consumer' term encompasses both patients, in Member States where the co-payment system exists, and the reimbursement bodies.

(917) As the sector inquiry shows, the above-mentioned limitations (related to both the court order prohibiting an entry or ordering a temporary exit, and the unwillingness to enter at risk) can be judged *ex-post* to be unfounded. This takes place whenever patent litigation proceedings end with: (a) a judgement allowing a generic entry, (b) a settlement according to which an originator company agrees to an earlier generic entry and/or transfers a net value to a generic competitor in order to compensate for the delayed entry of the latter or (c) a withdrawal of a case by an originator company before patent's expiry date, while other circumstances, e.g. a judgement in other jurisdiction, may lead to the supposition that the patent was invalid or non-infringed.

(918) In practical terms, a delay in generic entry also means a delay in (a) the price reductions on the originator product, (b) the savings due to a transfer of market shares from an originator company to its generic competitors, (c) possible substitution effects (where a cheaper product substitutes more expensive treatments within the same therapeutic group) as well as (d) other possible demand expansion effects (increases in the demand for the product concerned due to income effects or further substitution effects).

(919) Any delay obviously benefits an originator company that can continue charging its original price and does not lose its market shares, and harms a generic competitor that cannot enter the market. However, on top of that, the delay also harms the consumers who are being deprived of cheaper medicines.

(920) Figure 133 presents a simplified diagram showing the welfare effects of delayed generic entry.[368] The vertical axis represents the average price for the product in the market, the horizontal axis sets out the time dimension. The diagram is based on a number of observations stemming from real life examples collected in the sector inquiry. The grey area in the lower part illustrates a part of the consumers' welfare captured by an originator company that succeeded in obtaining an interim injunction preventing the entry of a generic competitor. Because of that interim injunction, prices had stayed at the original level for a longer period and started decreasing only when the interim injunction ended. The delay is illustrated by the grey arrow between the two vertical dotted lines in the upper part of the diagram.

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[368] For the purpose of the welfare effects analysis, two general assumptions relating to the system protecting the intellectual property rights are made: (a) the protection period provided for in the law is optimal from an economic welfare perspective, i.e. the applicable protection period induces the optimal level of R&D activities, (b) the originators cannot expect to be able systematically to extend the protection period over the period prescribed in the law and hence their level of R&D activities is strictly based on the anticipation of "super-normal" profit to be gained during the standard protection period and of normal profit after that protection period ends.

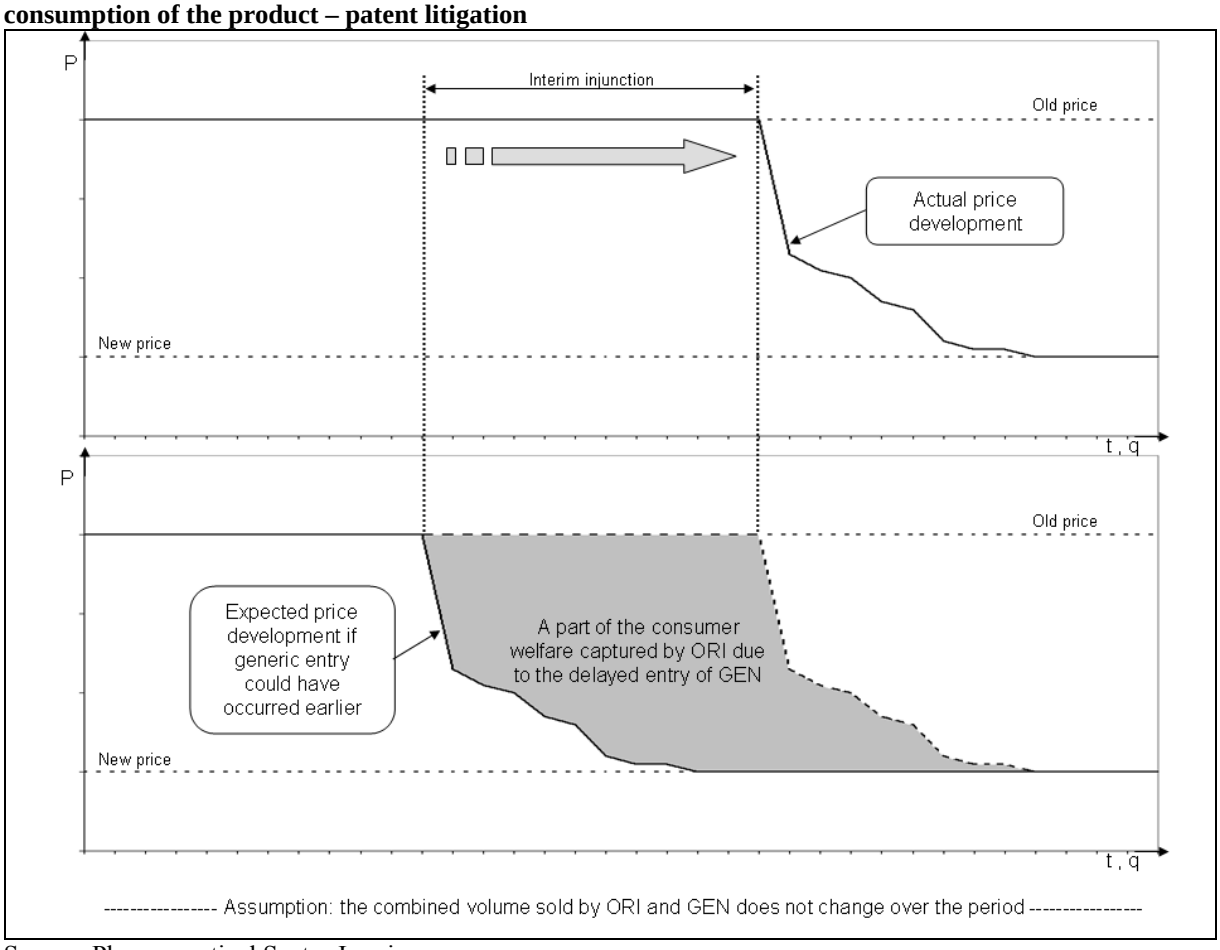
In addition, for illustration purposes, two working assumptions relating to prices and volumes are made: (a) the expected price developments if generic entry could have occurred earlier take the shape of the actual price developments, (b) the combined volume of sales of both the originator company and its generic competitors does not change over the analysed period, which, in turn, allows to plot both quantities and time intervals on the same axis.

(921) A proxy for the overall damage suffered by consumers can, at constant consumption volumes, be calculated by multiplying (a) the difference between the actual and the expected price and (b) the quantities traded during the period of delay. Such a calculation provides only a conservative estimate, since it does not take into account the fact that the consumers could have also benefited from the substitution effect related to a generic entry, as well as from an income effect as described above.

(922) The damage at constant consumption volumes calculated in this manner is also the exact part of consumer welfare that is captured by an originator company, for which the appropriated value, after the deduction of costs incurred in litigation, represents a net benefit. Such litigation costs are usually a small fraction, e.g. 10%, of gains. It also means that originator companies will see a strong incentive to become involved in litigation unless there is a strong likelihood of them having to pay damages to a generic competitor for wrongful interim relief.

(923) One can observe that the above analysis can be applied by analogy also to circumstances where the delay of legitimate generic entry is due to other practices, most notably settlements and interventions at marketing authorisation offices as well as pricing and reimbursement bodies.

Figure 133: Possible effects of delayed generic entry in terms of welfare distribution, for given levels of consumption of the product – patent litigation



Source: Pharmaceutical Sector Inquiry

(924) As the replies to the sector inquiry received from the generic companies indicate, the way in which the risk assessment is carried out can and does vary from one firm to another. Therefore, it is very difficult to precisely quantify the overall delay of

legitimate generic entry. This is a particular issue problem in instances where a generic company refrains, for a certain period of time, from selling its product on the market. This can be due to concerns related to the originator's strategy consisting of specific tools, such as the creation of extensive patent clusters and/or a launch of pre-emptive disputes and contacts, that is the tools which raise the barriers to entry without any formalised, direct interaction between a given generic company and its originator counter-party.

(925) Nevertheless, an estimate of the delay of legitimate generic entry can be provided, at least for those cases in which a formal action, such as court litigation, an intervention before one of the market authorisation bodies or patent opposition proceedings, was taken. The period of delay may last – on average – from 1.5 years, in the case where the sale of a generic product is suspended by an interim injunction and under the conservative assumption that a generic company will (re-)enter immediately after the interim injunction is lifted. An average of 2.8 years is seen where a generic company is involved in litigation and chooses not to enter until the matter is resolved through all court instances. Delay can, on average, be as long as 3.6 years, in the case where a generic company decides to launch an opposition procedure before the EPO and chooses not to enter until the final outcome of opposition is known. In this context, it is also worth recalling that an originator company's intervention before a marketing authorisation body may have similar effects. Such an intervention may influence the timing of marketing authorisation, which is required for a commercial launch of any medicine; on average, this takes place approximately four months later than in the cases of non-intervention.

Summary

In many instances originator companies use two or more instruments from the "tool-box" in parallel and/or successively in order to prolong the life cycle of their medicines. These instruments notably include secondary patenting, patent related contacts and disputes, litigation, settlements, and interventions before various authorities. Certain originator companies even resorted to the cumulative use of all these instruments for certain medicines.

The extent to which these instruments are used depends on the commercial importance of the medicines. The sector inquiry shows that more life cycle instruments are used for best-selling medicines.

The combined use of life cycle instruments may increase the likelihood of delays to generic entry; delays due to the use of several instruments may sometimes be cumulative. More generally, it may significantly increase legal uncertainty to the detriment of generic entry and can cost public health budgets and ultimately consumers significant amounts of money.

3. Competition between Originator Companies – The Issues

(926) This chapter deals with the competitive relationship between originator companies.

(927) In the pharmaceutical sector there are number of therapeutic areas which are viewed by originator companies as being commercially particularly interesting, as the demand for treatments is high or is expected to be high in the future.[369]

(928) Originator companies compete with each other for this demand. This means that they are often engaged in competing R&D activities with the aim of being the first to market a treatment for a given disease. Moreover, even where treatments already exist, originator companies may compete against each other by, for example, marketing alternative treatments. This increases consumer choice.

(929) As explained previously, before being able to bring a product to the market, each originator company has to overcome a number of obstacles (e.g. failure during the R&D process, problems with authorisation), including obstacles which might be created by other originator companies.

(930) The purpose of this chapter is therefore to examine to what extent originator companies interact and, more specifically, to what extent they might find themselves in situations where one company blocks another.

(931) This chapter does not question the value of (incremental) innovation. Neither does this chapter aim to provide guidance on whether certain types of practices could be considered compatible or incompatible with the EC competition law. Such an assessment would require in-depth analysis of the individual practice taking into account the factual, economic and legal background.

(932) The following issues will be analysed:

Patent Strategies: an overview of patent strategies adopted by originator companies is provided. The purpose of these patent strategies is described, with a particular focus on so-called "defensive patents" against competing originator companies and their activities.

Potential patent infringement issues, patent-related exchanges and litigation: this section first analyses the potential for originator companies to find themselves blocked by another originator company. Subsequently, patent-related exchanges between originator companies which have not (yet) led to litigation, such as contacts and disputes, are examined. Finally, litigation between originator companies is analysed.

Opposition procedures: in this section, opposition procedures and any subsequent appeal procedures in which an originator company's patent is opposed by another originator company are considered.

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[369] For further details see Chapter B.1.1.

Agreements: the different types of agreements between originator companies common in the pharmaceutical sector are outlined. This section first analyses settlement agreements and then looks at other agreements in more detail.

3.1. Patent Strategies

(933) The definition of the term "patent strategies" for the purpose of this section encompasses all company strategies concerning the use of the patent system for the benefit of the company, as can be seen in the section on patent strategies concerning the relationship between originator and generic companies.[370]

(934) The purpose of this section is to analyse whether a patent strategy within a more general strategy of an originator company is intended to block the development of a new competing product rather than to protect an invention of its own.

(935) Patents can fulfil many functions. Originally intended to entice an innovator to disclose his or her invention to the public — thereby benefiting society (information function), by offering him or her in return a fixed period of exclusive commercial exploitation of the innovation (exclusive and protective function) — they may serve additional purposes, e.g. to maintain freedom to operate, or serve bargaining, financing or other purposes.[371] While patents generally fulfil the function of protecting innovation and thereby play a fundamental role in fostering innovation, there may be cases that suggest the use of patents with the main purpose of limiting competitor's R&D activities.

(936) This section will first look at the way in which originator companies preserve their freedom to operate, by patent clearance studies, identification of overlaps, resolution of dispute potential and ways of patenting. Then it will examine the extent to which patent strategies are used to prevent companies from developing a competing pharmaceutical product. In particular, this section sets out the role that so-called "defensive patents" play in this context. It will close with a short description of patent interference of R&D projects as perceived by some originator companies and the detection mechanisms for patent infringements employed by originator companies.

(937) Quotations from internal documents are used to illustrate the purpose of some of the companies' patenting strategies. They represent only a part of those obtained in the course of the sector inquiry. Again, it has to be pointed out that the majority of these quotes have been taken from documents obtained during the inspections in January 2008.

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[370] For further details, see Chapter B.2.1. and C.2.1.

[371] For further details see Chapter B.2.11.3.

3.1.1. Strategies to Preserve Freedom to Operate

(938) It is essential for an originator company to ensure that its alleys of research remain as wide open as possible, in particular with regard to further development of its own inventions. This was confirmed by the vast majority of originator companies interviewed and is illustrated by the following quote from an originator company:

> *"Objectives of patenting activities […] include: providing appropriate levels of protection for significant areas of R&D activity, preventing unauthorised competition and providing the necessary freedom to operate."*

(939) Consequently, the companies' strategies usually include the initial filing of a patent for a family of molecules defined by a certain structure with similar (expected) properties, including molecules that are the actual development candidates. In fact, patents for several different molecule families might be filed in order to secure back-up candidates in case those of the first group do not get to and through the development stages.

(940) In order to maintain their freedom to operate, companies will usually, once the candidate compound has taken the first development hurdles, file for a number of patents applications on innovations around it (e.g. modifications and improvements, combinations with other molecules). This allows them to carry out further research in order to improve their own pharmaceutical product by further development and without interference from competitors.

3.1.1.1. Originator Company's Patent Clearance Studies

(941) Before developing a new product, it is an established practice, amongst the largest respondent companies, to conduct patent clearance studies of all aspects of the product to determine whether any third party patent could present potential patent issues with regard to the development of the new medicine. In fact, one originator company, explaining that it did not have any patent litigation with other originator companies, claimed that it believed:

> *"[…] this is because originator companies tend to search and analyse potentially relevant third party patent property before commencing research activities in a particular area. This is to develop truly innovative products which seek to meet unmet patient needs, while avoiding dependency upon third party patents and licenses. The third party patent checks are repeated as the project progresses, with the same aim as before."*

(942) Another originator company described its policy as follows:

> *"Like most companies, [our company] runs regularly so-called 'freedom-to-operate' searches, i.e. it reviews publicly available patent information in order to establish to which extent third-party patents exist in a given area of its R&D poles. Where such patents are identified, a decision to continue with the activity in the R&D pole concerned is taken on a case-by-case basis after assessing the relative strength of the patents identified, including the number of patents, their validity and the breadth of their scope."*

(943) Such patent clearance studies concern a variety of patent-related topics. One originator company specified that it can include:

> *"targets and assays used, the active ingredient, the pharmaceutical formulation and its excipients, chemical processes and intermediates used, pharmaceutical manufacturing, etc. Such studies are performed throughout the development phase of the product as well as, if necessary, during its lifecycle as a commercial product."*

(944) Another company stated in this context that when it:

> *"believes [it] has discovered a new compound that may be useful in providing therapeutic effect in humans, the first task performed is to determine whether or not the compound is indeed new. A detailed, electronic literature search, therefore, is performed routinely on each compound. Usually this search is performed by a library service team within the research and development department of the company, but scientists often perform searches on their own."*

(945) Finally, a number of (smaller) originator companies did not indicate that they dedicate resources to tracking the existence of other originator companies' overlapping patents, even less by collecting records on such patents. Some of them simply stated that they are not aware of patents owned by any other originator companies which cover, if only in part, any of their INNs, R&D poles or patents.

3.1.1.2. Results of Clearance Study: Possible Overlaps

(946) Given a certain concentration of the areas on which companies focus the risk of overlapping R&D poles increases and might lead to more disputes in the future. As one patent or patent application may cover hundreds of specific molecules, the likelihood of overlaps may be increased in certain cases. This is especially the case for patent applications which cover a new compound or combinations of compounds. According to one of the respondents, they:

> *"file new compounds patent applications which also cover combinations comprising (1) said "new compounds" and (2) a large number of combination partners. These combination partners can be other originator company's INNs or patented compounds."*

(947) To the extent that companies apply for a secondary patent regarding a product already marketed, such patents are reported to have less influence on the freedom to operate. In this context, one originator company explained:

"We are aware that numerous, typically hundreds of patent applications are filed by third parties, including generic companies, which disclose secondary aspects of a successfully marketed INN e.g. alternative formulations, processes of manufacture, salts, polymorphs, enantiomers, combinations etc. Most of these applications are filed after the launch of originator INN and hence do not represent a potential threat to our freedom to operate. In addition, many of these patent applications are abandoned before grant. They therefore represent no threat to existing products i.e. those launched prior to the filing date of any third party patent applications."

(948) However, if further development of the marketed product goes in the direction of one of these "secondary" aspects and the patent applications covering them have not been abandoned, such patents could then influence the freedom to operate. An example of primary patents concerning a secondary aspect would be the development of a combination.

3.1.1.3. Solutions in Cases of Overlaps

(949) If at the end of clearance studies it is concluded that the activity does not infringe any third party patent, product development or commercialisation will likely continue.

(950) If, however, in the course of patent clearance studies it is determined that the compound developed is not new, companies may abandon R&D of the compound completely or take a different approach. If an overlap with a patent belonging to another originator is detected, a solution mentioned by some of the companies is to design around this patent, i.e. to develop alternatives to avoid falling within the scope of a patent which is considered to be valid, for example by generating an alternative process. If a company concludes that their intended activity infringes a third party patent, it seems to be a common practice to contact the patent owner in order to resolve the matter, possibly by concluding a licensing agreement.[372]

(951) In some cases companies also decide to take the matter to the patent authority – they file Third Party Observations in connection with a patent application, if necessary, or launch opposition proceedings or annulment proceedings against the patent granted, as one company pointed out:

"Vice versa [our company] has made efforts to further opportunity to operate by challenging other's IP rights, in so far as these rights were granted wrongly in [our company's opinion] and hindered or would have been able to hinder our own development activities […]."

[372] For more detailed analysis of contacts between originator companies see in Chapter C.3.2., for analysis concerning licensing agreements between originators please see in Chapter C.3.4.

3.1.1.4. Patenting

3.1.1.4.1. Scope of Patent

(952) Once the identification of drug development candidates has matured, an originator company will have to think about how best to protect them through patents.

(953) By filing patent applications with broad claims, a company will usually make sure that competitors do not identify the relevant candidate at an early stage and possibly block its development by patenting any further developments. This is illustrated by the following remark by an originator company:

> *"'Smoke screen' patenting is done by filing a number of patent applications relating to similar subject-matter in order to prevent third parties to find out which subject-matter is of primary importance to [our company]. Thus, e.g. in the field of the [class of compound] [our company] applied for patent protection for the specific development compound. In order to establish a "smoke screen" additional patent applications directed to specific other [class of] compounds were filed."*

(954) The patent applications will then usually claim a whole class of compounds that have a similar molecular structure and are believed to show similar effects. Later on the company may be able to split the application into divisional applications covering individual claims made in the first applications and/or file applications for secondary patents relating to, e.g. the formulation, dosage or new indications of the compound. In all of these cases the company will be able to support its applications with new experimental data gathered during its R&D phase in order to strengthen the application.

3.1.1.4.2. Time of Filing Patent Applications

(955) For an originator company it is essential to get the timing right when filing patent applications. If it files too early, the company will lose a valuable portion of the patent exclusivity period, as development and approval of the pharmaceutical will take several years before product launch. If it files too late, the company runs the risk of its competitors discovering the same compound and filing their patent application first. All in all, originator companies tend to file early rather than late to secure their freedom to operate, as the following quote from one company illustrates:

> *"An early patent filing date is often critical for obtaining patent protection for a drug product. Delay in filing until identification of a lead compound may allow a competitor to obtain earlier patent coverage on the encompassing genus, potentially foreclosing development of the compound by [our company]. Priority of invention may sometimes be a matter of months. […]"*

(956) Thus filing may take place even during the early phases of research.[373]

3.1.1.4.3. Geographical Scope of Patent Filing

(957) As mentioned elsewhere,[374] filing patent applications can become costly once the process reaches the national or regional phase. This is the latest point in time at which a company will have to decide which countries it wants to obtain the patent for. Usually, the more important the invention is for a company, in particular with view to turning the invention into a commercial product, the more national patents it will seek. Geographic priorities of the 43 originator companies addressed in the sector inquiry have already been explained in Chapter C.1.2.

3.1.2. "Defensive Patenting Strategies"

(958) By definition each patent restricts other parties' freedom to operate. However, this is generally accepted as it contributes to the competition in R&D and as it entices originator companies, continuously and without too much delay, to produce R&D results beneficial to their own businesses and to society. From society's viewpoint, however, restriction of another company's freedom to operate may be problematic where the originator company maintains and uses patents to block the development of a new, competing product rather than for protecting an invention of its own. This is sometimes referred to as "defensive patenting".

(959) "Defensive patenting" is a term used by several companies in their patent strategy. On the basis of the definitions in these companies' documents, defensive patent applications usually refer to inventions which the applying company considers to have little or no prospect of being developed and/or commercialised and/or which, once granted, the company holds primarily to protect itself against actual or potential competition.

(960) Usually, such patenting activities will only cover the strategically most important countries, as is illustrated by the following quote taken from an originator company patenting strategy document:

> *"List 3 Defensive: minimal commercial value, Intended (sic!) for purely defensive situations where there is no prospect of the invention being commercialised by [our company] and where it is unlikely that a third party will work inside the scope. The territorial coverage is designed to provide rights in the major markets rather than to provide a minimum [company] position. USA, Japan, Europe [all Contracting States*]"*

(961) Similarly another company stated in one of its documents:

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373 For further details see Chapters B.2.1. and C.1.2.

374 For further details see Chapter C.1.2.

> *"Defensive patents ("Limited list" Patents) serve to protect compounds closely related to [our company's] candidates or products. They do not cover [our company's] candidates or products. They protect compounds that would be of interest to a direct competitor."*

(962) When asked how many of their patents and applications originator companies would regard as defensive, most originator companies claimed that none of their patents would fall under this definition. However nine companies identified some of their patents as defensive patents, the number ranging from two to 1,350 within individual companies.

3.1.2.1. Blocking Competitors as Main Purpose

(963) At times, defensive patenting strategies might pursue the aim of patenting an invention that the patent holder has no interest in developing and bringing to the market, with the main purpose of keeping other originator companies from further developing a specific invention and bringing it to the market, as the general patent strategy statement of one originator company shows:

> *"We identify options to obtain or acquire patents for the **sole** purpose of limiting the freedom of operation of our competitors. […]"*(emphasis added)

(964) This company then goes on to explain that:

> *"[…] Rights covering competitive alternatives are maintained in major markets until risk of competing products appearing is minimal."*

(965) Another company categorised patent applications for inventions into a specific group in order to prevent competitors from developing a certain project rather than to protect its own invention for the purpose of further research and commercialisation, as becomes apparent from the following quote:

> *"Limited level: Compounds, processes or uses which do not relate to a candidate or potential candidate, but either have a clearly-perceived defensive value. […] The term "defensive value" refers to a case that covers subject matter that […] would likely be of interest to a research-based competitor seeking to develop a product that would compete with a developmental candidate or product [of our company]. Included here are cases that cover a competitor's product. […] If the case no longer qualifies as a Candidate case but it continues to have defensive value […],the case should be cut to the Limited list rather than completely abandoned."*

(966) Similarly another company explained in its strategy documents that even where it does not want to pursue an invention it still wants to keep it from being developed by others:

> *"Attached is the Proposed Global Patent Strategy […]. There are many countries in the world and obviously we cannot and should not file patent applications in all of them. […]List 4 is not a filing list at all but is for Defensive Maintenance. Patents that are no longer of interest but that [our company] does not want to dedicate to the public (and to the competition) are kept and their annuities/maintenance fees are paid in these selected, core countries."*

(967) In such cases of defensive patents the patent confers on its holder an absolute and enforceable right preventing other companies from developing such an invention. Furthermore the publication of the patent application will create prior art. Once the patent applications have been published and thereby become public knowledge, the subject matter of the application will not be of development interest to other companies even if the applications are subsequently withdrawn, as they would not be able to get patent protection for their development if it has already been anticipated by the first patent application. Thus companies may achieve the aim of preventing the development of a new competing product by gaining an enforceable right on the one hand and by creating prior art on the other.[375]

(968) The following quote from an originator company shows how, by having patent applications published, it expects to render inventions uninteresting for competitors where the patent might overlap with one of the competitors' R&D projects, thereby blocking the development of competing inventions:

> *"**Defensive Patenting**: Defensive patenting is done by filing a patent application for an invention in the most important countries and to have it become published. In this way a prior right to the invention is generated, which may prevent a third party to become or remain active in a certain field of interest for [our company]. Once the patent application is published it becomes prior art which prevents the patenting of the same invention or the obvious derivations thereof. […]"*

(969) Similarly, another company emphasises the deterrent effect that publication can have on other companies, even if it is not interested in pursuing the patented invention itself, as this quote taken from an internal communication in one originator company shows:

> *"Even if it turns out later that the combination of [our company's molecule] with [other molecules] will not be of interest to [our company], the publication of the appropriate patent application 18 months after the priority date will at least prevent third parties from gaining patent protection therefore. In other words, filing of an application creates "burned earth" with respect to the subject matter disclosed therein. Such a filing traverses third parties efforts to gain any kind of benefit from our substance […] with respect to the subject matter disclosed in the application."*

(970) The communication goes on to summarise:

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[375] In cases of defensive publication, a company developing a medicine without patent protection could still obtain data exclusivity provided it has carried out the necessary clinical trials. However, it would not be protected against competitors running similar trials during that time. Also, the data protection period is shorter than the patent protection period.

"B) Disturbance of competitors

Even if [our company] chose to not develop an appropriate combination the filing of an application would prevent third parties from putting on the market and/or getting patent protection on such a combination later on. Therfore [sic] the filing of the patent application would simply "disturb" our competitors. To my personal opinion, everything that disturbs our competitors is useful to [our company]!"

3.1.2.2. Defensive Publication

(971) The effect of creating prior art can also, to a certain extent, be achieved by so-called defensive publishing, i.e. the publication of an invention in an article, where a company is focusing on keeping its own freedom to operate as in the case of the following quote from an originator company:

"Finally, defensive publications are particularly useful to prevent competitors from using the patent system in order to block [our company]."

(972) Judging from the documents gathered during the sector inquiry it seems though that this practice is less used by companies than defensive patenting. The reason may be that defensive publishing does not give the company an enforceable right. A company that decided to pursue an invention regardless of existing prior art, i.e. at the risk of not being able to obtain a patent but still with the aim of marketing a product, could not be prevented from doing so. For this an enforceable right such as a ("defensive") patent would be needed.

3.1.2.3. Effect of Defensive Patenting on Other Companies' R&D Projects

(973) In a few cases originator companies expressed concern about the patent strategies of a competitor, in particular where they felt that their R&D projects were obstructed by the patent applications of competing originator companies. This is best illustrated by the following submission from an originator company:

"[Another originator company] filed several "paper" patent applications related to [our company's molecule]. The only objective was to impede [our company] from developing [our company's molecule], as far as (i) no research laboratory data and/or work exists related to this paper patent applications, and (ii) [the other company] has no right on [our compound] compound, protected by patents owned by [our company] A letter […] was received by [our company] from [the other company], […] stating that [the other company] is not ready to achieve any settlement at all regarding the blocking patents."

3.1.2.4. Effect of Divisionals

(974) Six (of 43) companies stated furthermore, that divisional applications[376] by competing originator companies had interfered with some of their R&D projects. Thus one company stated:

> *"Issues, such as the filing of a divisional patent application by another company, may arise and impact on the business case for a R&D project [of our company]."*

(975) In several cases this has led companies to challenge these divisional applications, once granted in opposition procedures. One originator company, however, pointed out that:

> *"The filing of divisionals before EPO can extend uncertainty for several years."*

(976) In opposition procedures, in particular, unduly broad claims were challenged. Originator companies felt in general that they should not be accepted.[377]

3.1.2.5. Licensing

(977) In some cases a company might attempt to patent certain inventions without intending to develop them but rather to use them in negotiations with other companies. Thus, one company claimed that it obtained patents:

> *"in order to create bargaining tools in cases of vital importance to [our company]"*

(978) Another company pursued patents in order to create a licensing opportunity with other companies, as becomes apparent from its quote explaining one of its patenting categories:

> *"Limited level: Compounds, processes or uses which do not relate to a candidate or potential candidate, but […] could represent a licensing opportunity."*

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376 For a general overview on divisional applications see Chapter in C.2.1.

377 For further details see Chapter D.1.

3.1.2.6. Detecting Potential Infringement Issues by Patent Owners

(979) Mirroring patent clearance studies, once a patent has been granted, the patent holder will in many cases ensure that his patents are not infringed. The analysis of material submitted indicates that many originator companies are concerned to defend their intellectual property rights and that many carry out a continuous and thorough review of their own patent portfolio with the intention of detecting potential infringements by other originator companies. As, for example, one company stated:

> *"Our company is continually reviewing its patent portfolio to ensure that our IP is properly respected […]."*

Summary

The preliminary findings of the inquiry show that originator companies engaged in so-called "defensive patent strategies". Patents falling into this category were primarily used in order to block the development of a new competing medicine. The sector inquiry also shows that in such cases the originator companies do not intend to pursue these patents in order to bring a new/improved medicine to the market.

Defensive patenting can serve two purposes. First, it creates an enforceable right, which may prevent competitors from developing the subject matter of that patent. Secondly, it creates prior art as soon as the patent application is published. Thus the development of the published invention may cease to be of commercial interest to other companies as they would not be able to get patent protection for their development. Some companies also maintained that they engage in patenting activities to obtain licensing opportunities.

Originator companies also mentioned divisional patent applications as interfering with their R&D projects, which, once granted, they challenged in a number of cases by way of opposition procedures.

3.2. Patent-Related Exchanges and Litigations

(980) In this section, the prospect of originator companies finding themselves blocking one another is briefly assessed in order to illustrate the potential for conflicts between originator companies in the pharmaceutical sector. Next, patent-related exchanges between originator companies which have not (yet) led to litigation, i.e. contacts and disputes, are described, and then litigation between originator companies is analysed in detail.

(981) From a methodological point of view, it must be emphasised that this section is based upon information received from originator companies relating to the whole universe of 219 INNs. As described in the Annex Methodology,[378] a good number of the 219 INNs are those for which generic product entry to the market may have taken place (e.g. the E-75 list). In order to analyse litigation and related issues between originator companies, such INNs are probably less helpful, since originator companies may lose interest in INNs which have lost patent protection and can be produced and sold by generic companies. That being said, the 219 INNs also include INNs which are not yet available for generic companies for copying. It is in this "mixed" universe that the sector inquiry investigated the issues dealt with in this section. In some instances, therefore, the analysis is based on lower sample sizes. However, where appropriate, the statistical robustness and significance of the results was verified, in order to evaluate the relevance of the results presented in this section.

3.2.1. Potential Patent Infringement Issues

(982) Where an originator company is prevented from launching a new medicine on the market because of existing broad patent protection granted to another originator company, the former may have a disincentive to carry out research and development into new medicines or be forced to find an arrangement with the other originator company owning the patent rights (e.g. licensing).

(983) In order to ascertain what, if any, infringement issues exist, the sector inquiry looked into the extent to which overlaps exist between the patents of one originator company and the INNs, R&D programmes and/or patents of another originator company.

(984) In the pharmaceutical sector, originator companies tend to focus on the most promising therapeutic areas, which necessarily increases the density of companies active in these areas. The R&D activity of an originator company leads to the filing of patent applications in many instances. This increases the probability of patents belonging to one originator company being infringed by the activity of another originator company. Moreover, certain categories of patents, such as process patents, may potentially be infringed as soon as the process is used in any area, which further increases the risk of originator companies ending up in conflict with other originator companies.

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[378] For further details see Annexes to Chapter A.

(985) An originator company underlined the potential for infringement issues by explaining:

> *"In the field of prescription medicines for human use, there are a significant number of originator companies engaging in R&D activities with the objective of developing new and innovative products, uses and processes which are subject to patent protection. Moreover, there are also many originator companies active in the same therapeutic areas, seeking to discover and develop products to satisfy unmet clinical needs. Accordingly, there may often be a substantial volume of patents with similar or sometimes overlapping protection."*

(986) From data provided by respondent companies, the sector inquiry identified a total of more than 1,100 instances, across the 27 EU Member States, where patents of one originator company may be infringed by the INNs, R&D programmes and/or patents of another originator company. It should be noted, however, that this figure is based on 40% of respondent companies providing detailed information on the issue, indicating that such overlaps are very common.

3.2.2. Patent-Related Exchanges between Originator Companies out of Courts

(987) In the sector inquiry companies were asked to report disputes[379] and other forms of patent-related contacts[380] with other originator companies.[381]

(988) Classifying a given patent-related exchange as a contact or as a dispute is not always straightforward and can be subject to interpretation. The difficulty of distinguishing disputes from contacts is illustrated by a reply submitted by one of the respondent companies, which claims that they do not "maintain systematic records of all contacts with other industry players where either [they] or the other party assert claims against the other unless these rise to the level of a serious dispute that has significant potential to lead to litigation." Moreover, as stated above, the 219 INNs to which this information relates contain a good number of INNs of lesser importance to originator companies, because they have ceased to enjoy patent protection. In view of the difficulties of classifying exchanges as disputes or contacts and the generic focus of the 219 INNs, this section presents the combined findings on disputes and contacts.

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379 As mentioned before in footnote 233, for the purpose of the sector inquiry, disputes were defined as any exchange of views between companies which had not (yet) resulted in litigation, where, in particular, issues were raised concerning alleged infringement, or counter-claims for non-infringement or invalidity of one or several patents concerning a specific INN or R&D programmes has been raised. For the sake of clarity, patent opposition procedures were excluded from the scope of the term.

380 For a definition of "contact", please refer to footnote 233.

381 The question concerned all INNs cited in the Annex on INNs, and any R&D programmes and patents which were subject to contacts in the period 2000-2007 in any of the EU Member States.

3.2.2.1. Number of Patent-Related Exchanges

(989) Respondent companies reported approximately 200 patent-related contacts which had not (yet) led to litigation between different originator companies in the period 2000-2007 across the EU.[382] Responses from companies which were not able to provide exact figures also indicate that contacts may be common. As one of the companies puts it:

> *"In order to provide a meaningful answer [our company] has collected contacts on patent issues which went beyond the informal level of a mere telephone call or a spontaneous conversation but where proper meetings were held and/or where written communication was exchanged.*
>
> *Please note that [our company] does not have a formal process neither on corporate nor on a national level for recording contacts similar to the way it has a standard operating procedure regarding archiving of executed agreements."*

Respondent originator companies reported a lower figure for exchanges which they qualified as disputes. For the period 2000 – 2007, four companies reported eleven disputes concerning four INNs that did not end in litigation.

3.2.2.2. Context and Initiation of Patent-Related Exchanges

3.2.2.2.1. Exchanges Initiated by the Originator Company Holding the Patent

(990) As stated previously,[383] a number of originator companies monitor possible infringements of their patent rights and attempt to ascertain whether, for example, the INNs and R&D programmes of other originator companies have potential to infringe their rights. Where a possible infringement is detected, the originator company owning the patent right may take up contact with the other originator company in question.[384] As an originator company explained, this could be done to seek – in a first step – an amicable solution:

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382 Detailed data concerning exchanges with other originator companies was provided by approximately 40% of respondent companies.

383 For further details see Chapter C.3.1.

384 One of the respondent companies provides a categorisation of their patent-related contacts with other originators, which are patent-related to various degrees. The first of the categories covers *"specific contacts relating to a defined project involving [the company's] patent department." It includes "approaches to and from other originator companies in contemplation of a specific project and potential proposals to license-in or out a patent for the project. Depending on the circumstances, such an approach may then develop into a discussion and even a series of negotiations."* The second category concerns contacts encountered by local member state organisations of the company and the local organisations of other originator companies relating *"[…] to proposals to enter into licensing, supply, co-promotion, co-packaging and co-marketing arrangements. The focus of these contacts is on specific products that are on, or about to enter, the market. While these products are generally patent protected, the discussions*

[If the company reaches the conclusion] "that a court of competent jurisdiction would find that the intended activity infringes one or more of [their] patents, the affected […] company will contact the infringer and attempt to resolve the matter amicably (e.g. by granting an enabling licence). In the event the matter is not amicably resolved, patent enforcement proceedings may be pursued."

(991) The statement of another company confirms that it is not unusual for an originator company holding a patent to contact another originator developing an R&D programme in the same field as the patent in order to offer the latter company a licensing agreement on one or more of its patents:

[The company was contacted by another originator company owning a patent] "with an offer to license their […] patent. [Our company] replied that it did not desire a licence at this time, but might speak with them about a licence in the future."

(992) In some instances, originator companies owning the patent rights may send letters which could be of similar intention as warning letters addressed to generic companies.[385] They usually inform the addressee of the alleged infringement and, in some cases, outline the potential legal consequences. Although not directly adversarial from the outset, such letters indicate that the sending company has no intention to tolerate the alleged infringement of its patents.

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and contacts are focused on the collaborative aspects of manufacturing or marketing the products. Thus, generally these contacts do not involve or relate to patents of the other companies that concern [the company's] INNs, R&D programmes or patents." The third category of contacts as defined by the same company relates to contacts between its global or regional office and the global or regional offices of other originator companies. *"The focus of the discussions range from in-licensing of development-phase compounds, to out-licensing or divestment of mature brands, and everything in between (e.g., regional co-promotion deals, supply agreements, regional co-marketing, distribution, etc.). As above, the focus of these contacts is on the specific product or compound in development as opposed to any of the patents. Generally speaking, the products are patent protected, but the discussions do not involve or relate to patents of the other companies that concern [its] INNs, R&D programmes or patents. Typically, the discussion would involve another company's product or compound (covered by its own IP) or [the company's] product or compound (cove[re]d by [its] own IP). […] To further amplify this point, at any given time, [the company] is in discussions with multiple companies about potential in licensing opportunities. The extent of these discussions varies considerably from a short meeting, to a due diligence review of the prospective compound or product, to full-blown negotiations at the global level."*

385 For further details see Chapter C.2.2.

Example warning letter:

"[Our company] has compiled a patent portfolio composed of four patent estates. […] These patents may be of interest to you in connection with your […] programs.

Specifically, absent a licence from [our company], you would be practising inventions claimed in these estates by your manufacture, use, sale, offering for sale, and/or importation of [a product]. […]

For your reference, we have provided herewith:

1) four tables listing the issues patents and pending patent applications constituting the portfolio […]; and

2) a bound copy of documents containing the title page and claims of certain issued patents and published applications included in the portfolio, […] which are practiced (absent a licence) by the activities described above.

If you have any questions regarding the patent portfolio, please do not hesitate to contact me."

3.2.2.2.2. Exchanges Initiated by the other Originator Company

(993) Originator companies, which for example develop a new R&D programme, carry out patent clearance studies or, as they may also be called, "freedom-to-operate" searches, verifying whether their R&D programme might violate the patent rights of another originator company.[386] The sector inquiry established that when an originator company engaged in R&D detects a possibly relevant patent right held by another originator company, it may contact the patent-holding originator company:

"[our company] has had contacts with other originator companies regarding patents of those other originator companies which concerned [our company's own] R&D poles."

(994) The sector inquiry also examined separately situations, in which an originator company requested a licence from another originator company. In addition to reporting exchanges with other originator companies, respondents were asked to report all cases in which they approached another originator with such a request.

(995) Half (22) of the respondent companies confirmed that they had asked other originator companies for licences in the framework of exchanges. In total, they reported 99 instances for the period 2000-2007. The requests concerned a total of 84 INNs and R&D poles.

386 For further details see Chapter C.3.1.

3.2.2.3. Licences and Refusals to Grant a Licence

(996) Out of the 99 reported cases of licence requests mentioned above, in 77 cases a licence was granted, and in four cases discussions were still ongoing.[387] Companies faced a refusal in 18 cases. In 16 cases where respondent companies faced a refusal to license, they specified that they had planned to use the licence to bring a novel product onto the market.

(997) In cases where no licence agreement was concluded, respondent companies were asked to give reasons for the failure of negotiations. According to the replies received, in eight cases this was because parties failed to agree on the contract terms. In eight other cases companies explained that they did not continue the negotiations because they decided to abandon the project or because obtaining a licence was not essential for the project. In one case the respondent company was outbid by a third party and in two cases a licence was refused without any reasons being provided.

(998) The sector inquiry also examined the effect of the refusal to grant a licence by the patent owner on the activity of the requesting company. In five cases respondent companies managed to launch (or were preparing to launch) a new product despite it being impossible to obtain the licence. These companies explained that they managed to design around the patent to develop a different but similar product. In four cases respondent companies were still working on the development of the new product that had not been put on the market yet. However, in ten cases companies decided to close their project, and in one of those cases the company concerned stated explicitly that this was due to the patentee's refusal to grant a licence.

3.2.3. Litigation between Originator Companies

(999) Another form of direct interaction on patents between originator companies that falls within the scope of the inquiry is patent-related litigation.

(1000) The term "litigation" refers in this context to any type of court proceedings or other form of adversarial proceedings, excluding opposition notified to any patent office. It includes litigation before all courts in any given proceedings.

(1001) Litigation is a factor to take into consideration when analysing market conditions. For originator companies, litigation may be a tool to enforce their patents and therefore defend and preserve their rights. It may at the same time affect the research activities and market entry of potential competitors. As shown in Section C.3.2.1., there may be overlaps between the patents of one originator company with, for example, an INN or an R&D programme belonging to another originator company, which in some cases can lead to legal proceedings.

(1002) The sector inquiry analysed data on litigation between originator companies submitted by the respondents in order to measure the extent of litigation in the sector. Respondent

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[387] Such licences may be part of an (out of court) settlement, see Chapter C.3.4.

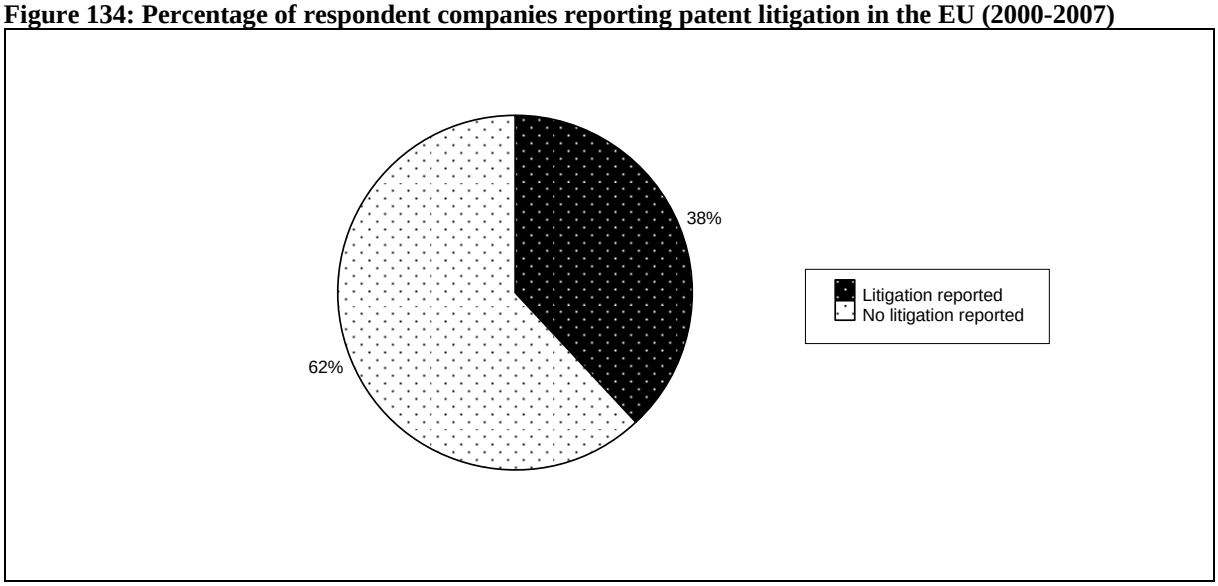
companies were asked to provide information on litigation with other originator companies in the period 2000-2007 in relation to any of 219 selected INNs, as listed in an annex to the questionnaire. As stated above, a good number of the 219 INNs are of more limited interest for this section, as they concern INNs which had lost patent protection and became eligible for generic copying.

(1003) This section first presents general data on litigation, including the number of companies involved, the INNs concerned and the number of litigation cases between originator companies. Subsequently, the types of legal actions and the patents concerned by litigation are examined. The section also analyses the outcomes of litigation and discusses interim injunctions. Finally, the overlap of patents, INNs and R&D poles of originator companies involved in litigation is analysed.

3.2.3.1. Number of Companies Involved, INNs Concerned and Number of Litigations between Originator Companies

(1004) It is informative to analyse the proportion of respondent companies which were concerned by litigation on any of their INNs and to give a general overview on the total number of litigation cases reported.

Figure 134: Percentage of respondent companies reporting patent litigation in the EU (2000-2007)



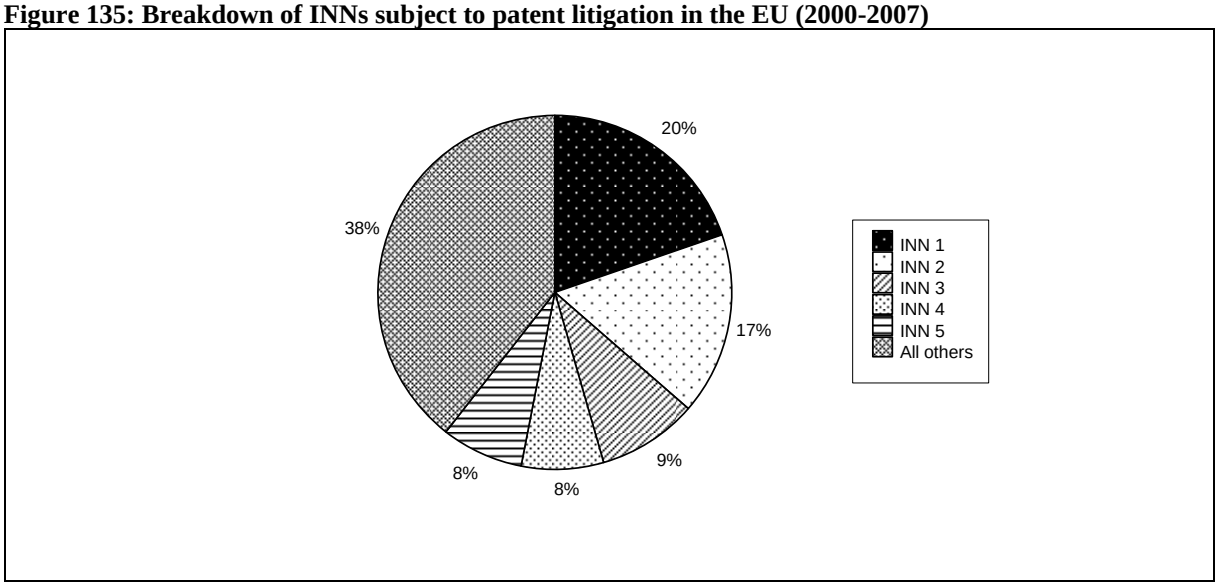
Source: Pharmaceutical Sector Inquiry

(1005) Figure 134 illustrates that 16 of the respondent companies (38%) reported that they were or had been involved in at least one separate case of litigatition[388] in the EU which related to another originator company's patents in the period 2000 – 2007.

[388] As in the section concerning litigation between originator and generic companies, the term 'separate litigation' is also used in the present section to refer to patent litigation cases in one Member State identified by a single court reference number irrespective of the number of patents concerned or parties and instances involved.

(1006) Respondent companies reported a total of 66 separate litigation cases taking place between 2000 and 2007 in an EU Member State. This includes separate litigation cases where final judgments were reached ("*res iudicata*"), but also litigation which was pending at the time of the survey or that was ended before the final judgment was handed down, for example by means of a settlement between the parties. Together, the five companies most involved in litigation accounted for 68% of all litigation reported.

Figure 135: Breakdown of INNs subject to patent litigation in the EU (2000-2007)

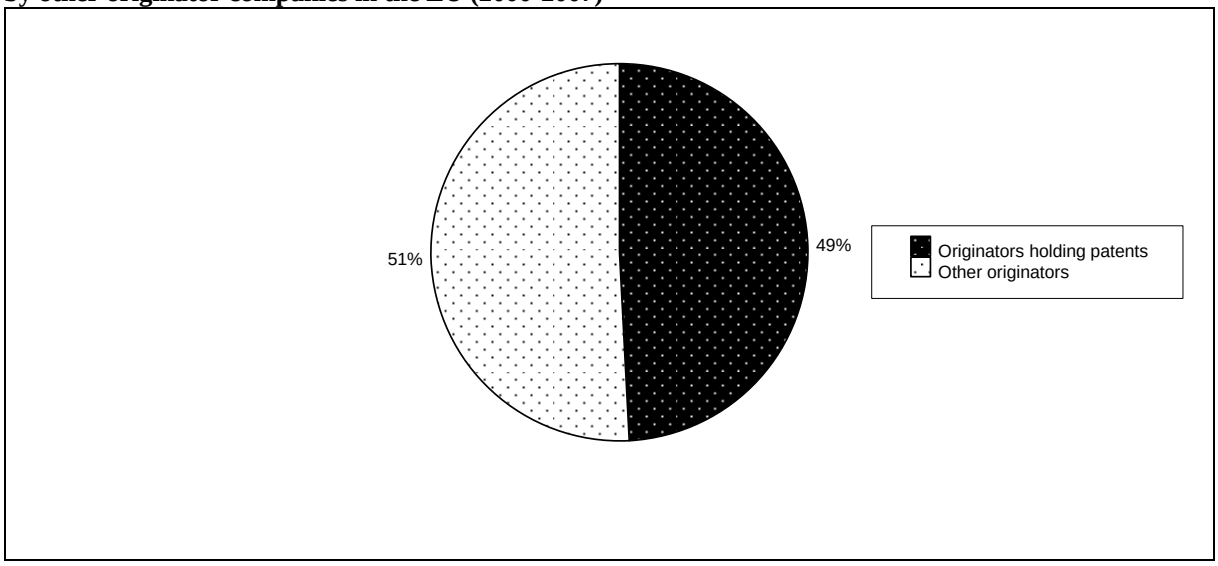


Source: Pharmaceutical Sector Inquiry

(1007) Figure 135 above presents a breakdown of INNs subject to litigation between originator companies in the period 2000 – 2007. Out of 219 INNs, 18 INNs (8.2%) were subject to litigation between originator companies.

(1008) The five INNs subject to the most cases of litigation together accounted for more than 60% of all litigation, namely 40 of the 66 cases. It should be noted that four of these five INNs belong to the top-selling INNs (T50 list). What is more, only six out of 18 litigated INNs are not qualified as top-selling INNs. The single INN concerned by the highest number of separate litigation cases accounted for approximately 20% of all cases.

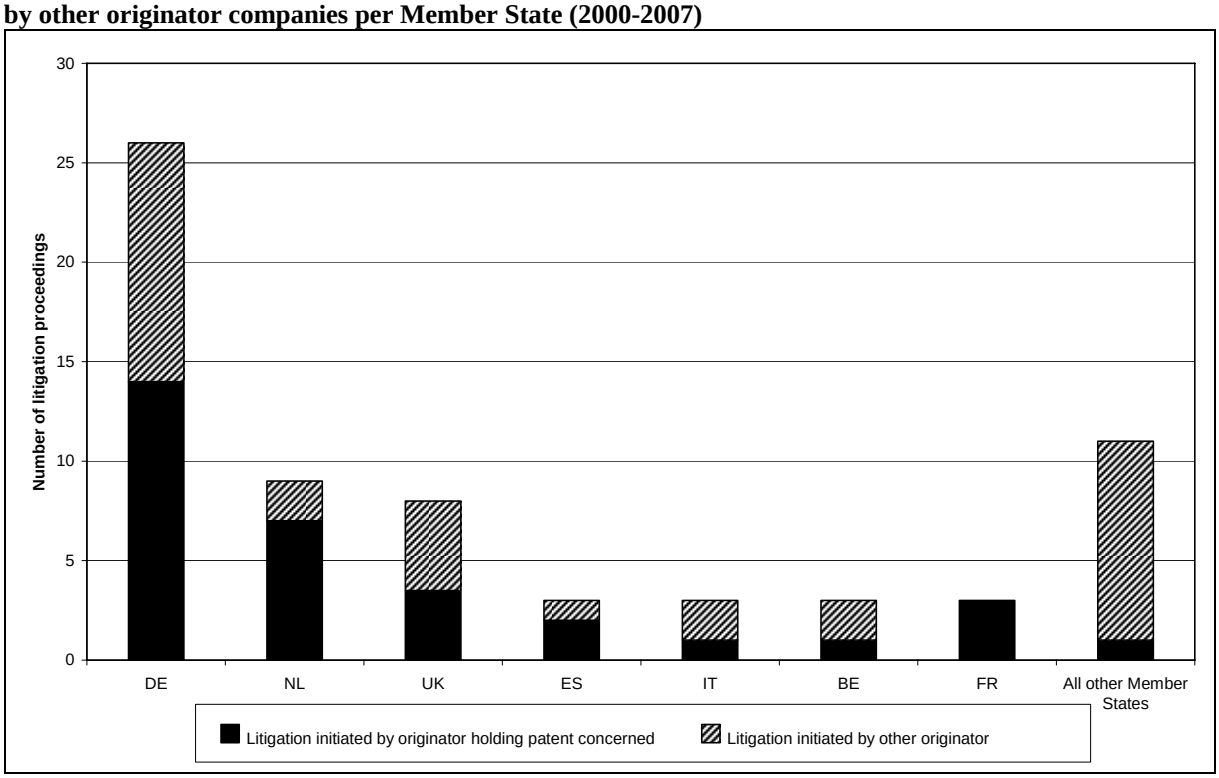
Figure 136: Percentage of litigation initiated by originator companies holding the patents concerned and by other originator companies in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1009) As shown in Figure 136 above, patent-related litigation was initiated to nearly the same extent by originator companies whose patents (including in-licensed patents) were concerned (49%) and by other originator companies (51%).

Figure 137: Number of patent litigations initiated by originator companies holding patents concerned and by other originator companies per Member State (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1010) Figure 137 above shows the number of patent litigations per Member State that were initiated by originator companies holding the patents concerned by litigation (including in-licensed patents) against other originator companies. The figure also shows the number of patent litigations initiated by the other originator companies. Member States

concerned by two or less litigation cases are not presented individually, but grouped together in the last column ("all other Member States").

(1011) The litigation reported concerned 17 Member States; the five Member States in which most litigation cases took place accounted for approximately 74% of all litigation reported.

(1012) It should be noted that the highest number of litigation cases, 26 out of 66, took place in Germany, accounting for 39% of all litigation reported. Second ranked was the Netherlands with nine reported cases. These countries were followed by the United Kingdom with eight litigation cases and Spain, Italy, Belgium and France, with three cases each. Together, the remaining ten Member States in which patent litigation was reported by respondents accounted for 11 cases.

(1013) In Germany, the Netherlands, Spain and France, the majority of litigation cases were initiated by originator companies with the purpose of enforcing their patent rights. In the United Kingdom, Italy, Belgium and in the combined group of "all other Member States" the majority of patent litigation was brought against originator companies holding the patent(s) concerned by other originator companies.

3.2.3.2. Types of Legal Actions Brought and Patents Concerned

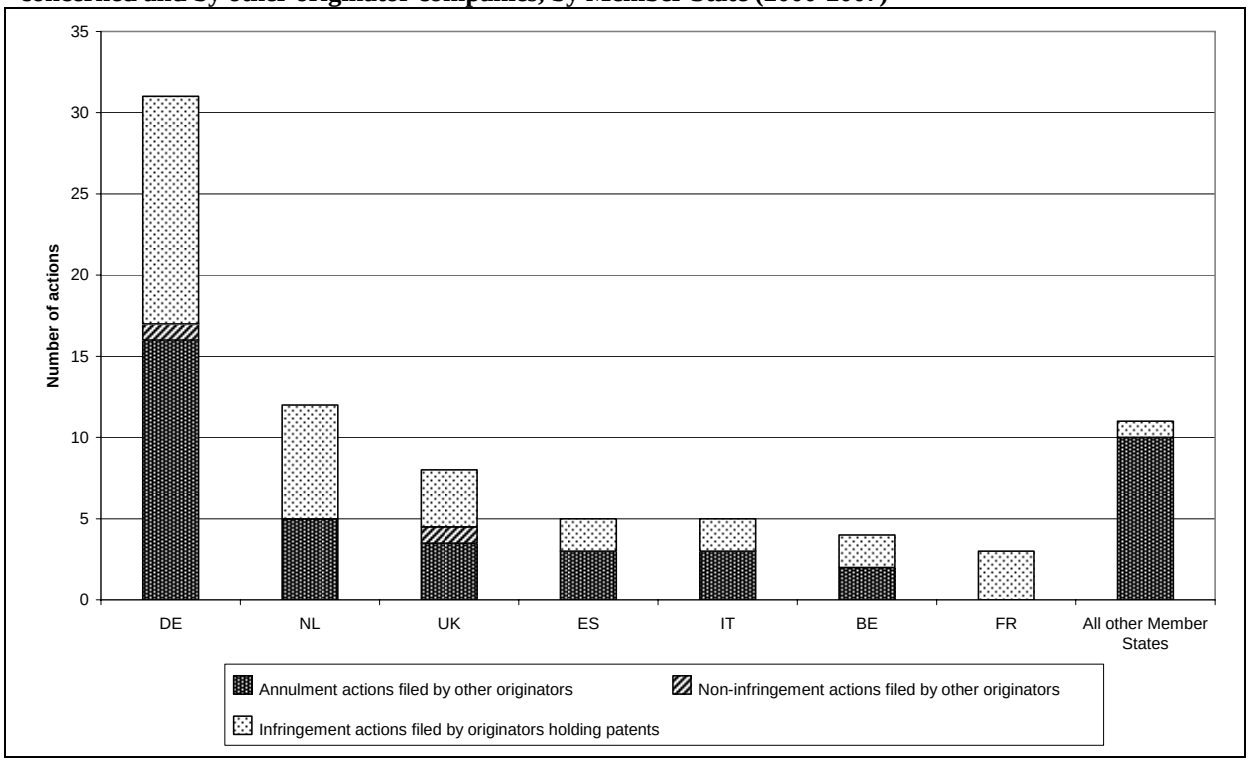
(1014) In order to better understand the possible scenarios for litigation between originator companies, it is useful to look further at the types of legal action brought and at the types of patents concerned by litigation.

(1015) Figure 138 illustrates in detail the number of specific types of action initiated in each Member State. Member States with only one or two litigation cases are not presented individually but grouped together in the last column ("all other Member States").

(1016) Figure 138 distinguishes between annulment[389] and non-infringement actions brought by originator companies facing the patents of other originator companies and infringement actions filed by originator companies with the purpose of enforcing their patents (including in-licensed patents).

[389] Also sometimes referred to by the respondent companies as "invalidity". Please refer to footnote 121 concerning clarification on terminology.

Figure 138: Number of actions (per type of action) brought by originator companies holding patents concerned and by other originator companies, by Member State (2000-2007)



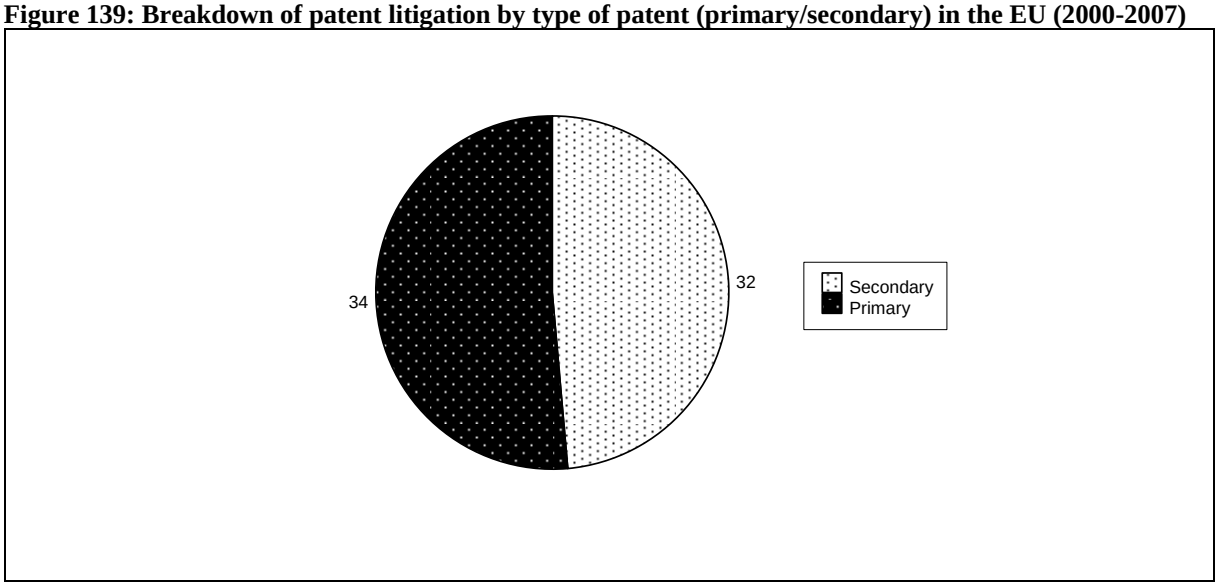
Source: Pharmaceutical Sector Inquiry

(1017) In 52% of litigation cases, originator companies aimed at enforcing their patents through infringement actions. In 68% of patent litigation cases, other originator companies challenged the validity of patents (65% annulment actions) or claimed that they did not infringe the patents in question (3% non-infringement actions). The sum of these figures exceeds 100% because some litigation cases concern more than one action, whether infringement, non-infringement or annulment, at the same time (e.g. as actions and counter-actions).

(1018) In Germany, the United Kingdom, Spain and Italy non-infringement and annulment actions accounted for a slight majority of litigation cases. Infringement actions filed by originators seeking to enforce their patents were predominant in the Netherlands and in France litigation concerned exclusively infringement actions. In Belgium the number of annulment and infringement actions was equal. In the combined group "all other Member States", patent annulment actions clearly predominated.

(1019) Note that in ten litigation cases (approximately 15% of all cases) both parties to the litigation claimed infringement of their respective patents. Such cases took place in Germany, the Netherlands, the United Kingdom, Spain, Italy, Belgium and France.

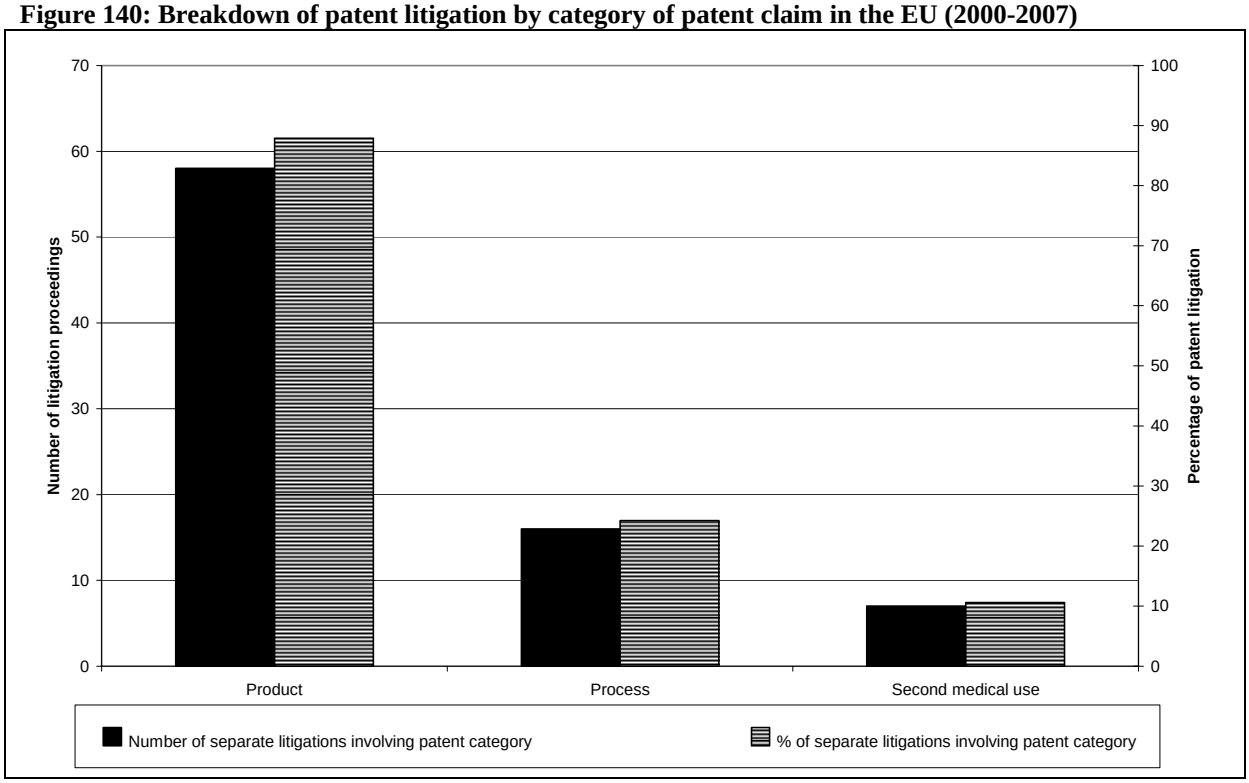
Figure 139: Breakdown of patent litigation by type of patent (primary/secondary) in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1020) Figure 139 provides an overview of the types of patents concerned by litigation. Primary patents accounted for 34 of the 66 cases of litigation reported (51.5%), while secondary patents accounted for 32 cases (48.5%).

Figure 140: Breakdown of patent litigation by category of patent claim in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry

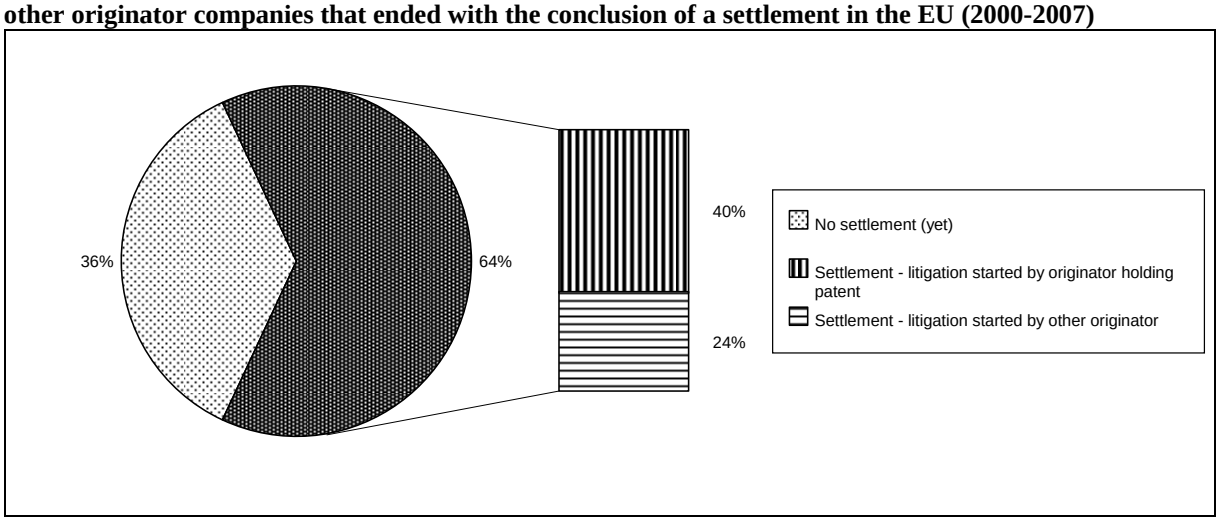
(1021) Figure 140 above illustrates the number of litigation cases concerning a given category of patent claims and their proportion in the total number of litigation cases between originator companies. Since patents may comprise more than one patent claim at the same time, the number of cases provided exceeds the actual total number of litigation cases. Accordingly, percentages exceed 100%.

(1022) Figure 140 shows that in almost 88% of cases litigated patents included product claims. Process claims accounted for just over 24% of litigation cases and second medical use claims accounted for approximately 11% of litigation cases.

3.2.3.3. Outcome of Litigation

(1023) In this subsection the outcome of litigation reported by respondent companies is analysed, in terms of how many cases were settled or reached final judgments and, in the latter case, whether compensation was paid.

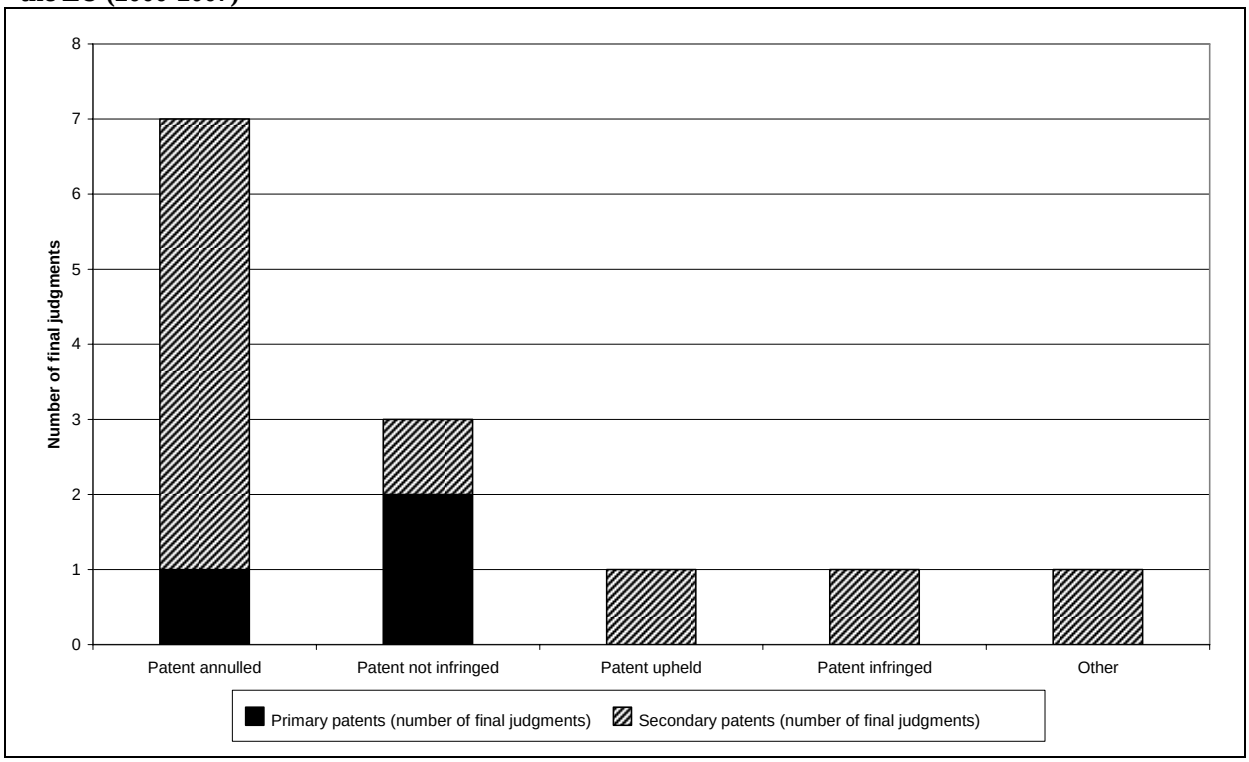
Figure 141: Number of litigation cases started by originator companies holding patents concerned and other originator companies that ended with the conclusion of a settlement in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1024) As can be seen in Figure 141, the majority of litigation cases between originator companies ended in a settlement agreement. Altogether, this happened in 42 of the 66 litigation cases, or 64% of cases. The majority of cases ending in settlement had been brought by originator companies holding the patents concerned (40% of all litigation cases, i.e. 82% of the cases brought by these originator companies). Cases brought by other originator companies ended in settlement in 24% of all litigation cases, i.e. 46% of cases brought by other originator companies.

Figure 142: Outcome of litigation by primary and secondary patents and by number of final judgments in the EU (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1025) Figure 142 illustrates the number of final judgments reached, broken down by outcome and by type of patent concerned.[390] Final judgments were rendered in 13 of the 66 litigation cases reported and for primary patents in three cases and secondary patents in ten cases. Litigation had been brought in four of the cases reported by the originator company holding the patent concerned, and in nine cases by the other originator company.

(1026) As illustrated by Figure 142, in the majority of cases the patent concerned by the litigation was annulled, i.e. in seven of the 13 litigation cases (approximately 54%). In three cases (23%) the patent was found not to have been infringed. In one final judgment the litigated patent was upheld and in one case the patent was found to have been infringed. There was one other case, in which the patent was initially upheld in amended form; the judgment became final when litigation was abandoned due to the expiry of the patent in question.

[390] The figures do not include judgments that became "final" pursuant to a settlement agreement between parties, e.g. by an agreement of the parties to renounce their right to appeal against a judgment or to withdraw a pending appeal.

Table 35: Compensation paid by originator companies holding the patents concerned to other originator companies (number of final judgments)

Outcome of litigation by final judgment	Compensation paid by originator holding patent
Patent upheld	0
Patent infringed	0
Patent annulled	2
Patent not infringed	2
Other	0
Total	4

Source: Pharmaceutical Sector Inquiry

(1027) Table 35 shows for the 13 final judgments shown in Figure 142, the cases in which the originator company holding the patent concerned paid compensation to the other originator company. As can be seen, such compensation was paid in two cases pursuant to the annulment of a patent and in two cases pursuant to the finding that the patent had not been infringed. In all four of those cases, compensation was ordered by court.

3.2.3.4. Interim Injunctions

(1028) According to the data submitted by respondent companies, hardly any interim injunctions were issued in litigation between originator companies.[391] This is in contrast to the findings on litigation between originator and generic companies, where interim injunctions are more regularly sought.

(1029) According to the explanations provided by respondent companies, some litigation cases concerned situations where the allegedly infringing product had not yet been marketed when litigation was begun. At that stage, for example, originator companies seeking to enforce their patents might not yet be able to seek interim injunctions, as no threat to their commercial position yet exists. The category of the patent alleged to have been infringed may also play a role. As one of the companies explains:

> *"the patent being asserted was a secondary patent on the process of making [a product]. Normally, it is difficult to obtain an interim injunction on a process claim and when many of the factual details relating to infringement were in dispute."*

[391] Out of 66 litigation cases only three procedures led to interim injunctions.

3.2.3.5. Cases of Litigation Concerning Potentially Overlapping Patents, INNs and R&D Poles of Originators with Patents of other Originators

(1030) In at least 75.8% of litigation cases between originator companies, the originator companies holding patents concerned by litigation had an INN or R&D programme in the same ATC3 class as the INNs and R&D programmes of the other originators, according to information obtained from the latter.[392] In other words, in the vast majority of cases the activity of the originator company whose patent was in question was very similar activity to that of the other originator company, which can be taken as an initial indication that the two originator companies were actual or potential competitors.

(1031) According to the other originator companies, in 36% of all cases where the originator company holding the litigated patent had an INN or R&D in the same ATC 3 class as the other originator, that patent did not cover any of the patent-holding company's INNs or R&D programmes.[393] In other words, in more than one third of these cases, initial indications are that an originator company entered into litigation against another competing originator company over patents which did not in fact protect any of its activity in the market.

Summary

In total, the inquiry reveals at least 1,100 instances across EU Member States where the patents held by an originator company relating to a medicine in the sample investigated might overlap with the R&D programme and/or patents held by another originator company for their medicine. This overlap creates significant potential for originator companies to find their research activities blocked, with detrimental effects on the innovation process.

In many cases originator companies tried to settle potential disputes, for instance through licensing. However, in approximately 20% of the cases where a licence was requested the patent holder refused to grant it.

The inquiry finds that originator companies engaged in litigation against other originator companies. The companies reported, in relation to the sample under investigation, for the period 2000 – 2007, a total of 66 cases of patent-related litigation, which concerned 18 different medicines. Litigation was initiated by the patent holder and the originator company allegedly violating the patent in equal proportions. In 64% of the cases, litigation was concluded by means of settlement agreements. The number of cases where a final judgment was reported was relatively low (13 of the 66 cases). The patent holders lost the majority (77%) of cases where final judgments were given.

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[392] In another 9% of cases the respondents to the market survey did not know whether or not this was the case.

[393] In another 16% of cases the respondents to the market survey did not know whether or not this was the case.

3.3. Oppositions and Appeals

(1032) This section analyses oppositions and appeals, in which originator companies opposed patents of other originator companies.[394]

(1033) As explained in Chapter C.2.3., the report is based on information obtained concerning oppositions and appeals in respect of 219 INNs. For general information on opposition and appeal procedures, in particular, their average duration, we refer to Subsection C.2.3.1.4.

(1034) Opposition procedures are a quality control mechanism on which originator companies can rely to have the patents of other originator companies scrutinised. If, for example, an originator company faces a so-called "defensive patent"[395] belonging to another originator company, it can oppose that patent. In the opposition procedure the patent's validity and scope is verified. If the patent proves to be invalid, it is either revoked or restricted in scope.

(1035) This section only covers the opposition procedure before the EPO (including appeals).[396] It first presents the number of opposition procedures and opponents in the period 2000 – 2007. It then examines the types of patents opposed, before analysing the outcomes of the final opposition and appeal decisions. Finally, the section looks into cases where the originator companies involved in the opposition procedure entered into a settlement agreement with each other.

3.3.1. Number of Opposition Procedures, Opponents and Types of Patents Opposed

(1036) In the period 2000 – 2007, a total of 58 opposition procedures were reported in which 76 opponents were active (Figure 143). This means that on average 1.31[397] originator companies opposed the relevant patents of another originator company in each opposition procedure.[398]

(1037) Figure 143 presents the total number of opposition procedures and opponents (originator companies) by year for the period 2000 – 2007. For each year, two bars separately show the number of opposition procedures and the number of opponents

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394 For oppositions and appeals concerning oppositions by generic companies against originator companies' patents, see Chapter C.2.3.

395 For further details on defensive patenting, see Chapter C.3.2.

396 For information on opposition and appeal procedures, reference is made to Chapters C.2.3. and B. A general overview of oppositions before offices and bodies of the Member States is provided in Subsection C.2.3.1.5.

397 76/58=1.31

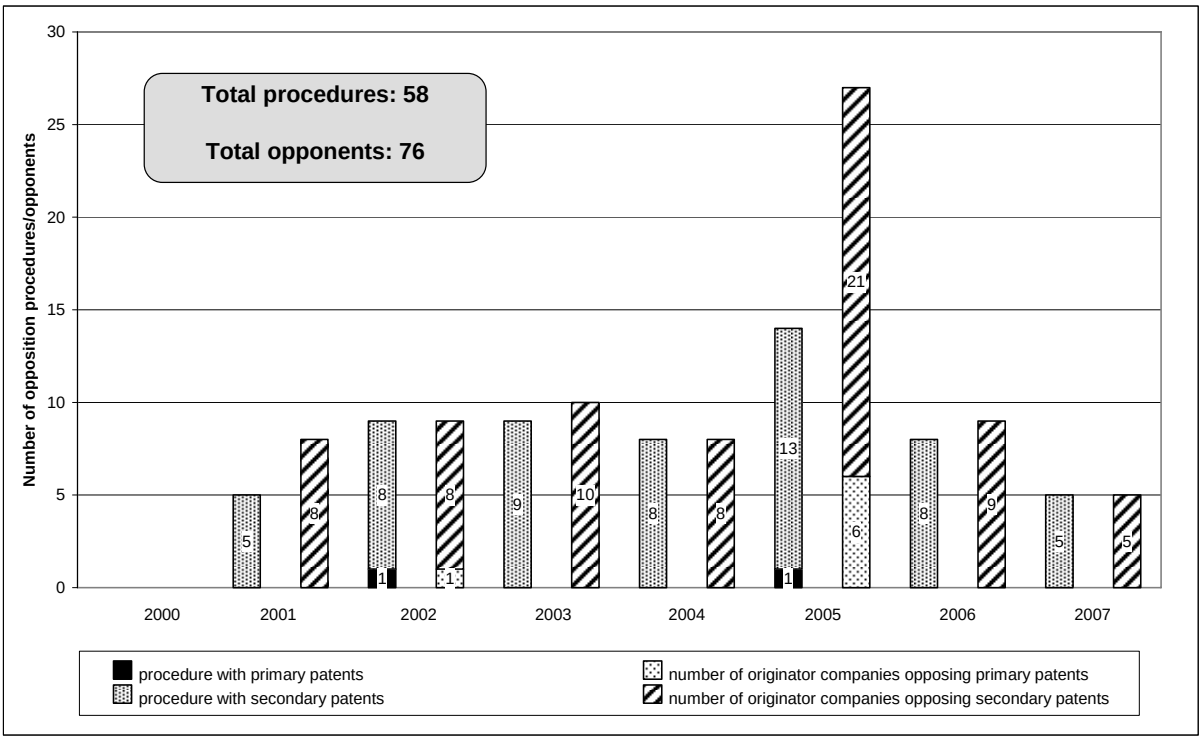
398 The same originator companies may be involved in a number of opposition procedures.

(relating to these procedures). Furthermore, Figure 143 distinguishes between opposition procedures concerning primary and secondary patents.

(1038) Figure 143 shows that no opposition procedure was reported for the year 2000. For the remainder of the period under investigation, i.e. 2001 – 2007, the number of annual opposition procedures ranged from five (in 2001 and 2007) to a maximum of fourteen (in 2005).

(1039) Regarding the type of patents concerned, Figure 143 reveals that originator companies mainly opposed secondary patents (56 out of 58 opposition procedures). Only in the years 2002 and 2005 was a primary patent opposed.

Figure 143: Number of opposition procedures before the EPO initiated by originator companies by type (primary/secondary) (2000-2007)



Source: Pharmaceutical Sector Inquiry

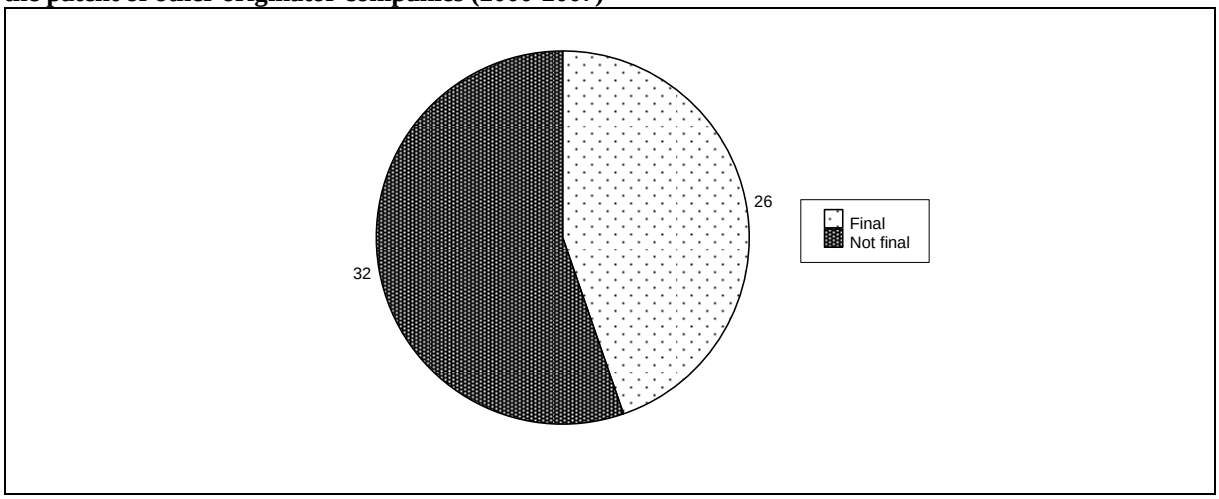
3.3.2. Analysis of the Outcomes of Final Opposition and Appeal Decisions

(1040) This subsection analyses the final outcomes. Like the subsection on oppositions and appeals by generic companies,[399] it refers to final EPO decisions (including appeal decisions) (*res iudicata*).

(1041) Figure 144 below shows that in 26 of the 58 procedures (44.8%) begun in the period 2000 – 2007, a final decision was reached. For the other 55.2% (32 out of 58), the procedures were still pending.

[399] For further details see Subsection C.2.3.2.2.

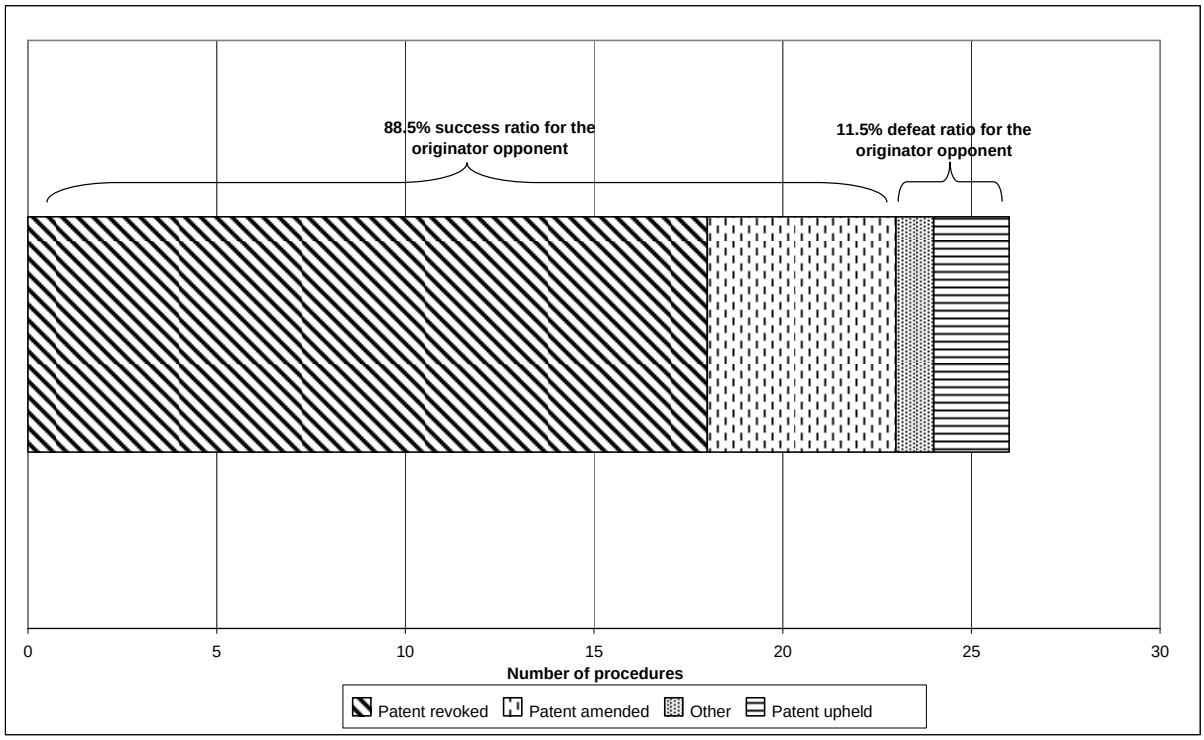
Figure 144: Final and pending opposition and appeal procedures involving originator companies against the patent of other originator companies (2000-2007)



Source: Pharmaceutical Sector Inquiry

(1042) Figure 145 shows the number of cases in which originator companies' patents were revoked, amended or upheld by the final decision. The figure reveals that in 69.2% (18) of all final cases, the patent was revoked, whilst in 19.2% (5) of cases it was reduced in scope (i.e. the patent was amended). In only 7.7% (2) of the cases was the patent-in-suit upheld. One decision was reported as having the outcome "other", because the opposition was withdrawn by the opposing party.

Figure 145: Final outcomes of opposition and appeal procedures involving originator companies against the patents of other originator companies (2000-2007)



Source: Pharmaceutical Sector Inquiry

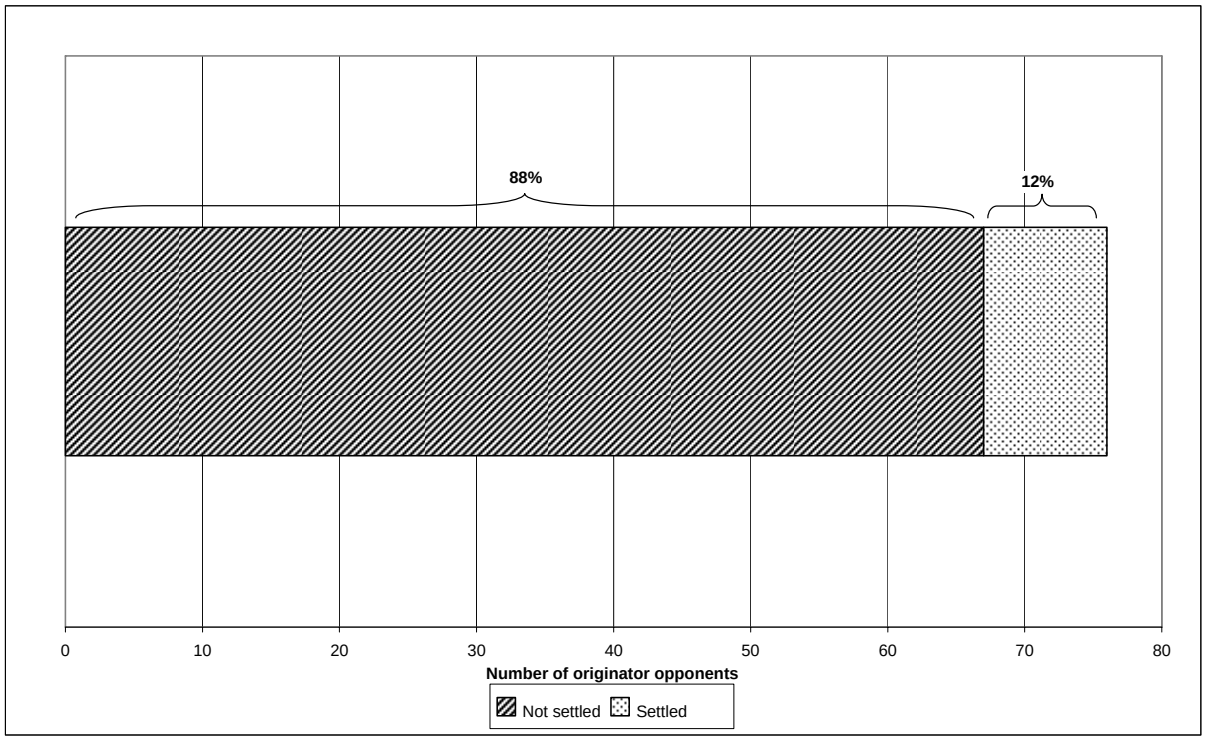
(1043) As mentioned in the subsection on oppositions and appeals filed by generic companies,[400] decisions to revoke the patent or maintain it in amended form are deemed as a rule to be outcomes in favour of the opponent. Consequently, the opposing originator companies were successful in 88.5% (23) of all cases in which a final decision was reached in the period 2000 – 2007. Only one of the final decisions concerned (and amended) a primary patent. The originator companies opposed in the procedure were only able to defend their patents in 11.5% (3) of all cases (the outcome "other" is allocated in favour of the opposed originator companies).

3.3.3. Settlements

(1044) The sector inquiry found that originator companies also enter into settlements with each other in opposition procedures. Figure 146 illustrates that the respondent opposed originator companies only settled with nine of the 76 opposing parties involved in the procedure. These settlements concerned eight different opposition procedures. The settlements are described in further details in Subsection C.2.4.1.

400 For further details see Subsection C.2.3.2.2.

Figure 146: Number of settlements with originator companies as opponents (2000-2007)



Source: Pharmaceutical Sector Inquiry

Summary

Between 2000 and 2007, relating to the sample of medicines under investigation, originator companies mainly opposed each other's secondary patents.

The opposing originator companies were very successful when challenging the patents of other originator companies. During that period, they prevailed in approximately 89% of final decisions rendered by the EPO (including the Boards of Appeal).

3.4. Settlements and other Agreements

(1045) As stated in the preceding sections, originator companies do in some instances reach settlements with one another as a result of specific disputes, litigation and/or patent opposition procedures. This chapter provides on overview of settlement practice between originator companies in the EU in the period 2000 – 2007.

(1046) In addition to settlements, originator companies enter into agreements with each other also outside the settlement scenario. This section provides an overview of agreements submitted for the purposes of this inquiry covering the entire value chain in the period 2000 – 2007.

(1047) Note that the objective of this section is not to provide guidance on which type of agreements concluded between originator companies could be considered compatible or incompatible with EC competition rules.[401]

3.4.1. Patent Settlement Agreements between Originator Companies

(1048) This subsection first gives an overview of patent settlement agreements between originator companies. Secondly, it sets out originator companies' general considerations with regard to entry into settlement agreements. Thirdly, it briefly describes patent settlement agreements concluded in the EU in the period 2000 – 2007.

3.4.1.1. Overview in the EU

(1049) For the purposes of the sector inquiry, originator companies were asked to submit all patent settlement agreements which they had concluded with other originator companies in the period 2000 – 2007 concerning disputes, litigation and/or opposition procedures with relevance to any of the EU27 Member States and any of the 219 INNs selected[402].

(1050) Overall, 50% of the originator companies that responded to the questionnaire had been party to settlement agreements with another originator company. Two of these companies had been party to five or more settlement agreements, whereas the majority of the companies that responded had been party to only one or two agreements. The proportion of settlement agreements to litigation between originator companies is 41%. Note that each settlement agreement usually covers several disputes and litigation cases.

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401 For further details see Annexes: EC Competition Law (Annexes to Chapter A).

402 For further details see Annexes: Methodology (Annexes to Chapter A).

3.4.1.2. Originator Companies' General Considerations and Decision Making Processes in Patent Settlements

Considerations when Entering into Patent Settlement Agreements

(1051) Originator companies that had concluded settlement agreements confirmed that they do not apply a specific or standard settlement policy. Accordingly, each patent litigation, dispute or opposition procedure is reviewed individually, with the overall goal of securing valuable patent rights and freedom to operate. On the other hand, originator companies view the option of settling with other originator companies as part of a bigger global patent position. Therefore, regardless of the eventual outcome of a specific opposition, dispute or litigation case, they might consider settling if they foresee issues of patent disagreement in other territories.

(1052) The key considerations of originator companies when settling are: the strength of their own position in the case (probability of winning or losing), market size and revenue of the originator company's product to be protected, expected/avoided cost of litigation and impact on personnel cost, the inherent uncertainty involved in patent litigation and the expected duration of litigation.

(1053) It has been submitted that in contrast to the originator-generic case, the stakes in disputes and litigation between two or more originator companies are often a question of avoiding or limiting litigation costs and possible damages rather than an attempt to gain market exclusivity. If the originator company which contests another originator company's patent right cannot successfully challenge the patent, it is likely to evaluate the feasibility of designing around the patent or examine the availability and cost of a licence agreement.

(1054) Most settlement agreements concluded between originator companies in fact involve the negotiation of a licence arrangement. One originator company summarised this as follows:

> *"Most litigation with an originator company involves disputes relating to secondary patents (such a process or other technology) which, if unlicensed, can be designed around. Originator companies generally do explore non-infringing alternatives. So, the issue in litigation between originator companies becomes an economic question- the costs to design around versus the cost to license versus the cost to litigate (if the patent appears invalid or if the question of infringement is a matter of dispute)."*

(1055) Another originator company described the settlement situation as follows:

> *"We evaluate together with many other originator companies large numbers of third party patents and other assets prior to pursuing negotiations relating to licensing or collaboration. Typically such contacts or potential contacts between originator companies make it much more likely that both parties will be able to seek a mutually beneficial settlement of any areas of potential dispute. In contrast, generic companies are unlikely to have any innovative research assets protected by IP."*

(1056) It has been submitted that settlements between originator companies occur at an early stage in the product life cycle, normally during the development phase of the product

(i.e. before the product launch). Originator companies therefore consider litigation easier to settle. One originator company concluded:

> *"In matters involving originator companies, any litigation is initiated early to clear the way if necessary, or to design around the patented features while the product is in development."*

Decision Making Processes

(1057) Originator companies do not report applying a single or fixed process for deciding whether to enter into a patent settlement agreement with another originator company. Generally, one of the parties opens settlement negotiations through in-house patent attorneys, legal counsel or other departments. Occasionally the first contact is made at top management level.

(1058) Typically, the in-house patent attorney and legal counsel, with the assistance of external legal advisers, assess the merits of the case and prepare a settlement proposal which is then presented to the executive management for review and approval. Some larger originator companies maintain a standing committee for intellectual property litigation which reviews all ongoing and potential IPR litigation. Important settlements with another originator company require prior approval by senior management.

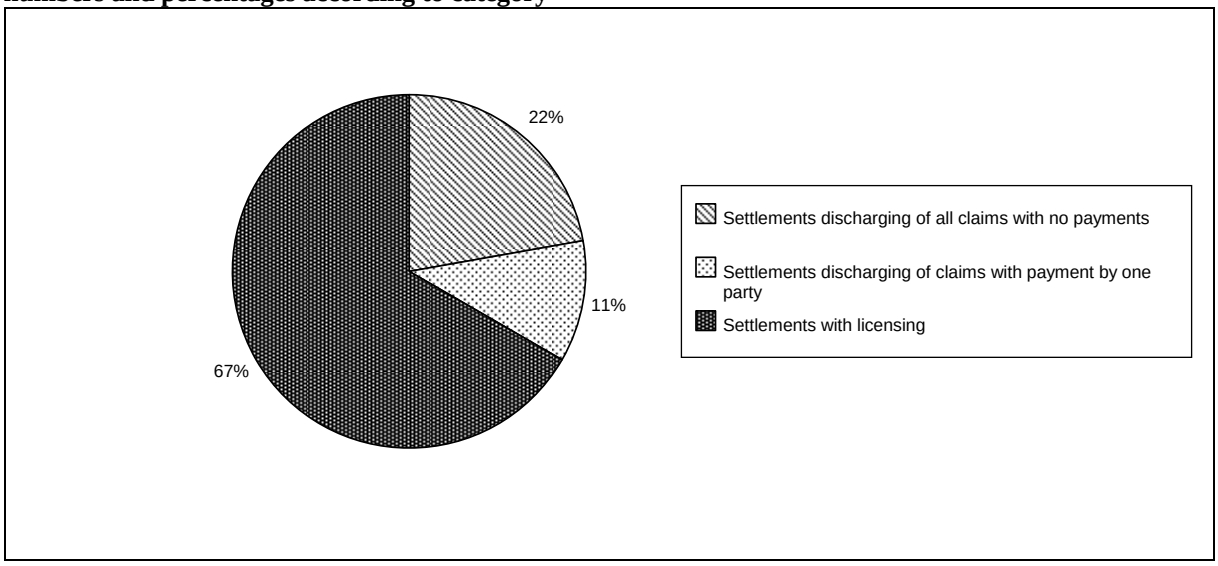
3.4.1.3. Description of Patent Settlement Agreements between Originator Companies

(1059) Settlement agreements generally cover all ongoing disputes, litigation and opposition procedures. Their geographic scope is typically determined by the territories covered by the patents.

(1060) As stated above, settlement agreements concluded between originator companies are very closely linked to licensing. In fact, several originator companies submit that their settlements with other originator companies are licensing agreements rather than settlement agreements.

(1061) The reported agreements can be categorised according to whether or not there was any value transfer between the companies involved in the agreement (Category 1 agreements do not involve any value transfer). If there was a value transfer (Category 2), one can further divide them into agreements where the value transfer only covers a specific payment (Category 2.I) and agreements where the main value transfer is the grant of a licence between the parties (Category 2.II). These main categories, which will be described in more detail below, are presented in Figure 147.

Figure 147: Main categories of patent settlement agreements between originator companies, together with numbers and percentages according to category



Source: Pharmaceutical Sector Inquiry

1. Settlement Agreements with No Payments

(1062) This category covers settlements that were concluded on a "walk away" basis, where the parties mutually agree to grant immunity from suit and abandon all existing and future claims for patent infringement and withdraw all opposition. In these agreements both parties agree to respect each others' products and patents and there is no impact on either market presence or operating conditions. These agreements do not involve any value transfer between the parties.

(1063) Such agreements are likely in situations where both parties believe that the continuation of the litigation would be a waste of time and the case is brought to an end in order to save costs. As illustrated in the figure above, out of a total of 27 settlement agreements reported, six (22%) were concluded on this basis.

Example: Category 1 settlement with no value transfer

Originator A is the owner of specific patents. Originator B opposed the patents. Parties wished to save costs and eliminate uncertainty regarding the patents. Originator B withdrew its opposition. Originator A agreed not to bring any claim or suit alleging that the manufacture or sale of B's product infringed or had infringed A's patent in any geographic territory. A discharged B from any liability or claim that B infringed A's patent by its manufacture or sale of its product before the settlement agreement or during the agreement's validity. No payments were included in the settlement.

2.I Settlement Agreements with a Payment

(1064) This category covers agreements whereby parties mutually agree to abandon all existing and future claims and grant each other immunity from suit, but where one of the parties agrees to pay a specific amount as cost compensation and/or damages, in full satisfaction of all existing and potential claims by the other party. As indicated in the figure above, three agreements out of 27 reported (11%) were concluded on this basis.

Example: Category 2.I settlement with a payment

Originator A and Originator B were engaged in various litigation actions in a variety of countries under their respective patents and licensed patents resulting in the expenditure on significant legal fees. Parties agreed to withdraw all related litigation and grant immunity from suit with regard to all past and ongoing actions for patent infringement. Originator A paid Originator B a specific amount in full satisfaction of all obligations.

2.II Settlement Agreements with Licensing

(1065) This category covers settlements which, in addition to immunity from suit and claims, largely involve a licence agreement and respective payment. Eighteen out of the 27 settlement agreements reported belong to this category, making it by far the largest category of settlement agreements concluded between originator companies. Licence-related settlements accounted for 67% of settlements concluded between originator companies.

(1066) A common situation for a settlement between originator companies involving a licence appears to be where one of the parties holds patent rights and the other is also developing a relevant product which it considers not to infringe the other originator company's patent rights. A difference in views arises, usually at the latest when the second originator company plans to launch the product. If the parties wish to settle, they typically grant each other such licences as necessary to allow each party to develop and commercialise their respective products free from the risk of infringement of the defined patent rights of the other party.

(1067) Even though settlement agreement with licensing would not require the contesting party (the licensee) to exit the market, the company concerned may continue to operate in the market only under the specific conditions agreed with the licensor. Its presence in the market is controlled by the licensor. This may entail agreement on specific 'non-compete' clauses.

(1068) The specific terms of settlement agreements with licensing vary in particular with regard to both the exclusivity of the licence and the level of the fixed payments and/or royalties. In addition to the specific issue of the patent opposition, dispute or litigation, the terms of a licence agreement contained in a settlement also reflect the parties' negotiated position.

(1069) Fifty percent of the licences granted in the settlement agreements reported were exclusive licences whereby the licensor did not maintain the right to grant a licence to other companies within the same territory. Licences were granted under settlements either against fees or without any fee. The fees were either fixed or based on royalties.

Two of the licence agreements reported were without any fixed payments and were royalty-free. In settlements which led to the termination of a licence agreement, one of the parties typically agreed to pay the other party a specific one-off payment in settlement of the alleged unpaid royalties. A non-competition clause with respect to products competing with the licensed product was in some cases included in the agreement.

(1070) Three of the reported settlement agreements contained a reciprocal cross-licence, whereby each party granted the other a licence.

(1071) One of the agreements submitted amended an existing licence agreement between the parties to allow the other originator company to launch a generic product, at the earliest when the patent in question loses exclusivity.

Box: Example: Category 2.II settlement with licensing

Two originator companies were parties to a licence agreement. The parties engaged in a dispute over the licensor's patent rights. The licensee consequently began proceedings at EPO seeking invalidation of the licensor's patent. At the same time, the parties opened negotiations to settle their dispute. Under the settlement agreement the licensor remained the sole owner of the patent and granted the licensee a non-exclusive license in the patent for manufacture and sale of the product in the territories covered by the patent. The licensor agreed to discharge the licensee of all claims alleging infringement of the patent. The licensee withdrew its appeal to the EPO and agreed to make a lump-sum payment in consideration for all the products that the licensee had manufactured/would manufacture or sell.

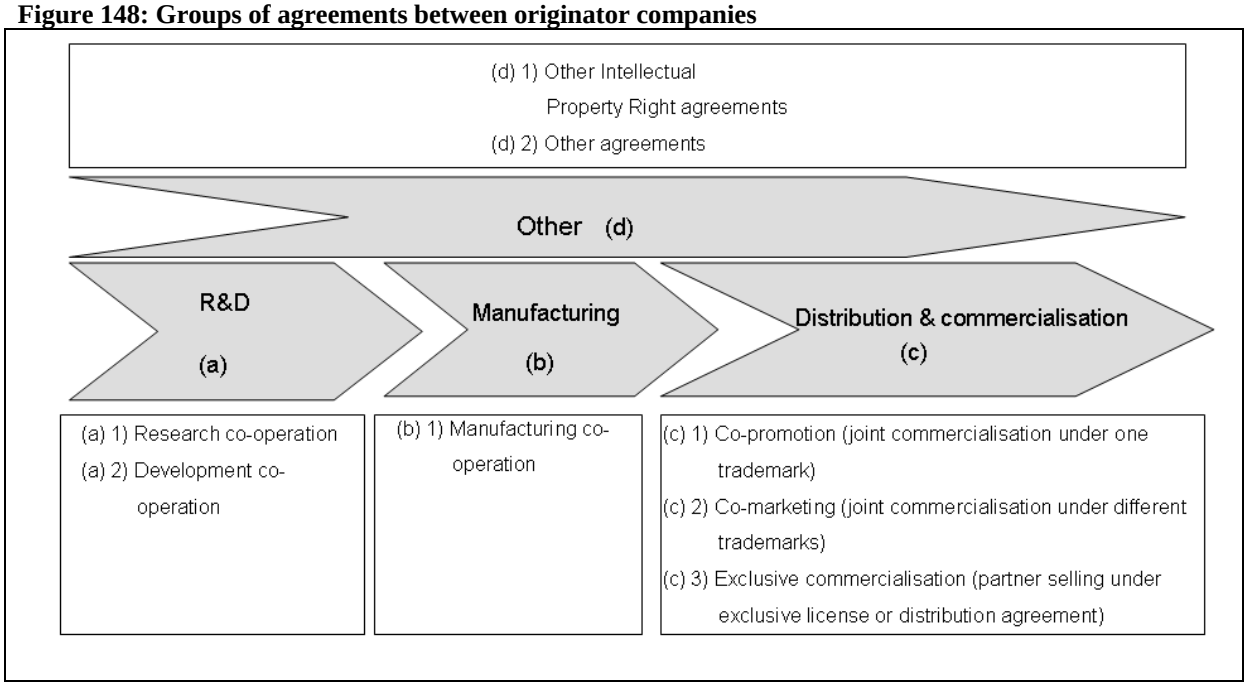
3.4.2. Overview of other Existing Agreements between Originator Companies

3.4.2.1. Definitions

(1072) In the course of the sector inquiry, the respondent originator companies were also requested to submit information on all agreements that they had concluded with other originator companies not involving settlements. This information was requested for all 219 INNs selected for the inquiry.

(1073) For the purposes of the sector inquiry and given that companies can have agreements on a whole range of topics, the reported agreements were grouped into four main categories. Figure 148 provides a schematic overview of how the agreements were categorised.

Figure 148: Groups of agreements between originator companies



Source: Pharmaceutical Sector Inquiry

(1074) The four main categories are: (a) Research & Development, (b) Manufacturing, (c) Distribution & commercialisation and (d) Other agreements. The agreements in these categories reflect the different phases that a pharmaceutical product undergoes during the normal product life cycle.

(a) Research & Development Agreements

This group contains both joint research or research cooperation agreements and development agreements between originator companies. The research agreements create a collaborative relationship between two originator companies in which each party contributes to the overall discovery process by utilising each party's expertise to deliver the desired outcomes. Development agreements could also bring significant advantages, including more efficient allocation of tasks and resources and the likelihood of earlier breakthroughs.

(b) Manufacturing Agreements

This second group deals with agreements between originator companies that cover the production part of the process. Manufacturing has been interpreted broadly and covers supply agreements, purchase agreements, tolling agreements, quality and technical agreements as well as (non-exclusive) licence to manufacture agreements.

(c) Distribution & Commercialisation Agreements

Distribution & Commercialisation agreements are often used when a company wishes to commercialise its product(s) in a given territory (e.g. an EU Member State) and lacks the infrastructure to support local marketing and/or sales. This third cluster has been subdivided into two separate groups:

- Marketing and promotion agreements: this also includes co-promotion agreements (joint commercialisation under one trademark) and co-marketing agreements (joint commercialisation under different trademarks).

- Distribution agreements: a partner sells under a licence or distribution agreement (including exclusive licensing and distribution).

(d) Other Agreements

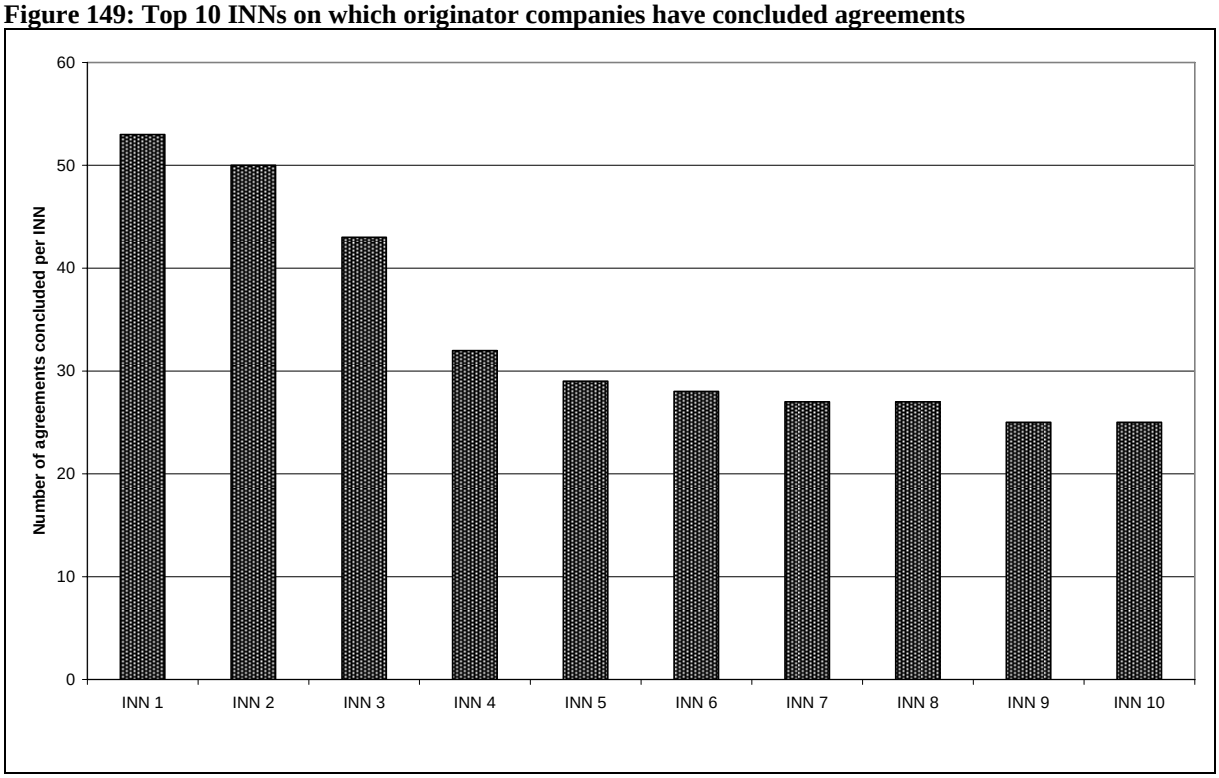
This fourth group represents all agreements that were not covered under the previous three clusters. Non-exclusive licence agreements represent a large part of 'other agreements'.

3.4.2.2. Analysis of the Data

(1075) Of the 43 originator companies that responded to the questionnaires during the sector inquiry, 41 confirmed that they had concluded agreements with other originator companies. In total, some 1,453 agreements were reported in the sector inquiry.[403]

(1076) The agreements concerned some 177 of the 219 INNs selected for the sector inquiry. It is interesting to note that of the 90 INNs in the T50 list [404], 77 INNs (or 85%) were covered by agreements between originator companies.

Figure 149: Top 10 INNs on which originator companies have concluded agreements



Source: Pharmaceutical Sector Inquiry

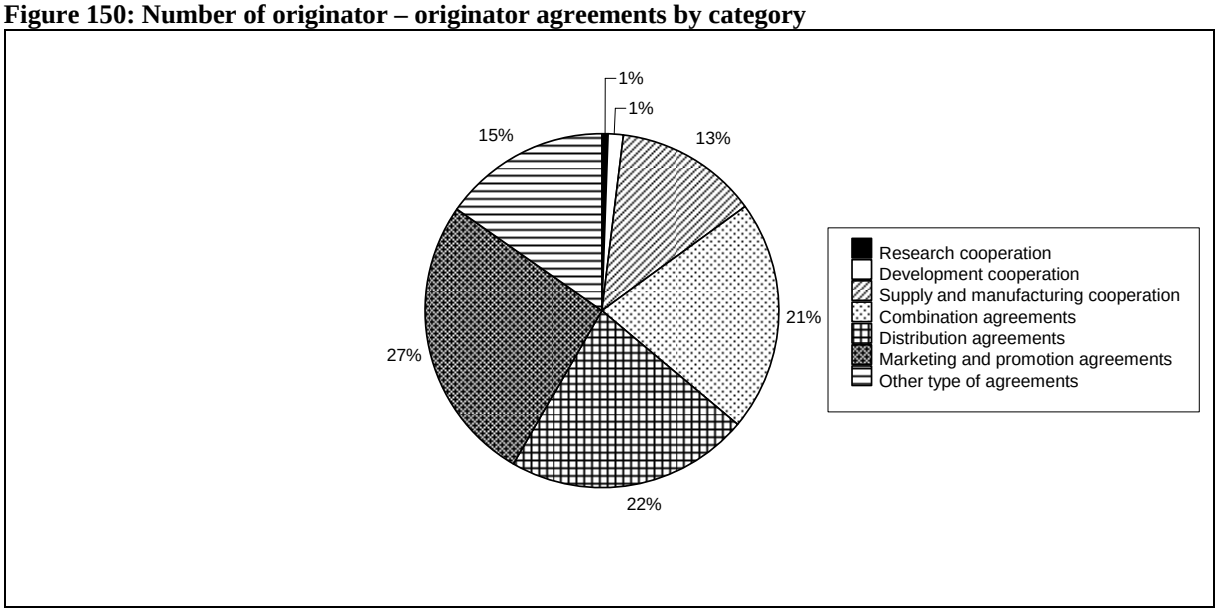
403 This figure is lower than the overall number of agreements reported to the Commission services as it had to be corrected for double counting and for INNs that were not in the Commission Annex.

404 The T50 list consists of the 50 top-selling INNs in three Member States over the same time period. For more details see the Annex Methodology (Annexes to Chapter A).

(1077) It is not meaningful to give an average of agreements per INN as some INNs appear to be concerned by only one or two agreements while others are involved in ten to 15 agreements. Figure 149 provides an overview of the top ten INNs on which originator companies have concluded agreements with each other.

(1078) The number of agreements for the top ten INNs on which originator companies concluded agreements varies between 25 and 53. Note that eight of the top ten INNs on which originator companies have concluded agreements appear in the T50 list[405]. Half of the top ten INNs have many distribution agreements whereas the other half have many manufacturing and supply or licence agreements.

Figure 150: Number of originator – originator agreements by category

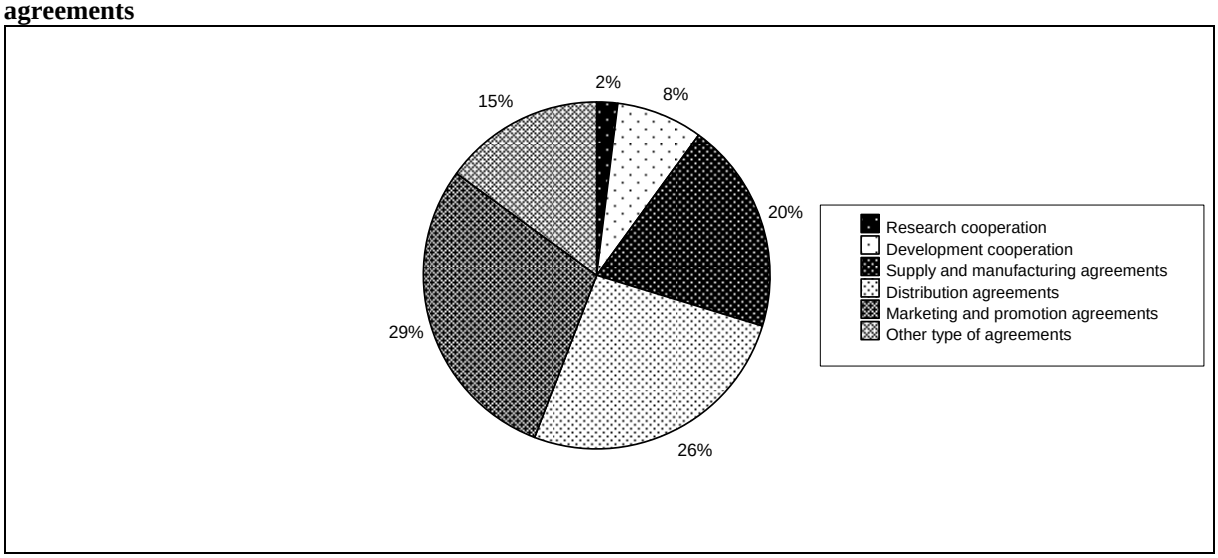


Source: Pharmaceutical Sector Inquiry

(1079) Figure 150 provides an overview of the number of originator company agreements with another originator company by category. Note that 27% of the agreements (384) are marketing and promotion agreements, 22% are distribution agreements (325) and 13% are manufacturing agreements (189). Research and development agreements account for 1% each or respectively 8 and 20 agreements. The category "other agreements" accounts for 15% (221 agreements). For 21% of the agreements (306 out of 1,466), a combination of agreements was reported between originator companies — hereafter called "combination agreements". In a combination agreement, development and/or manufacturing is often combined with another step in the product life cycle.

[405] The T50 list consists of the 50 top-selling INNs in three Member States over the same time period. For more details see the Annex Methodology (Annexes to Chapter A).

Figure 151: Percentages of the various types of originator-originator agreements, splitting up combination agreements

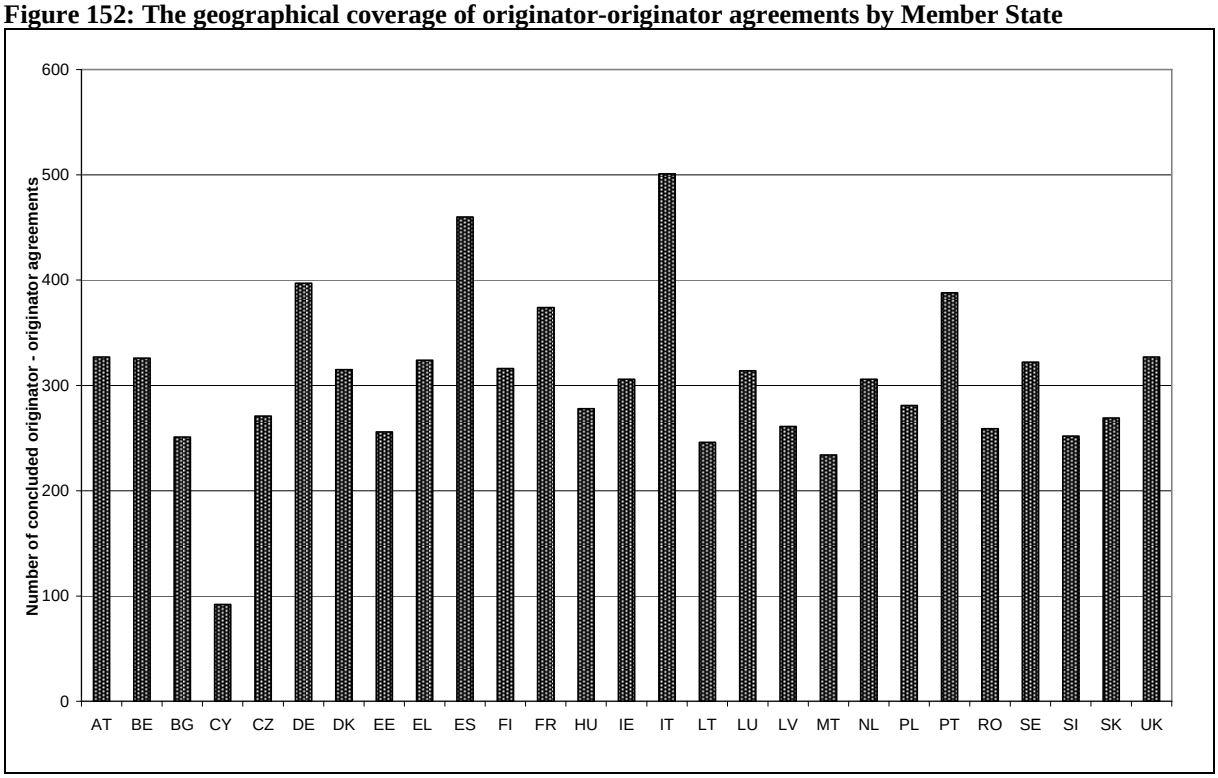


Source: Pharmaceutical Sector Inquiry

(1080) If the combination agreements are allocated between the more specific agreements, one obtains Figure 151. The figure shows that the marketing and promotion agreements become the biggest group, representing 29% of all agreements. The distribution agreements account for 26%, supply and manufacturing 20% and research and development cooperation respectively 2% and 8%. The other types of agreements account for 15% of the agreements. The Figure 151 shows these agreements in a pie-chart. One can see an upward trend towards the end of the value chain regarding the number of agreements contracted between originator companies. In other words, more marketing, promotion, and distribution agreements are made, for instance, than joint research and development cooperation agreements. Note that the sum of the figures exceeds 1,453 (agreements) as double counting occurs when a combination agreement is split up among all the more specific agreements that it covers.

(1081) It might also be worthwhile analysing the countries in which these originator company agreements are in place. Figure 152 identifies the countries in which originator-originator agreements have an impact. It suggests that the Italian and Spanish markets are subject to the highest number of agreements.

Figure 152: The geographical coverage of originator-originator agreements by Member State



Source: Pharmaceutical Sector Inquiry

Summary – Main findings

The inquiry confirmed that originator companies concluded settlement agreements with other originator companies in the EU in order to resolve claims in patent disputes, oppositions or litigation. In the period 2000 – 2007, some 27 settlement agreements relating to the sample under investigation were reported. Approximately 67% of these settlement agreements concerned a licence agreement (including cross licensing).

Besides settlement agreements, the preliminary findings of the inquiry also reveal that originator companies concluded many other agreements with each other. In total, some 1,450 originator-originator agreements were reported during the sector inquiry. For certain medicines, a wide range of agreements were reported, of which the majority concerned the commercialisation phase rather than the R&D phase.

D. COMMENTS ON THE REGULATORY FRAMEWORK

(1082) The Commission services received a significant number of comments on the regulatory framework. As explained in Chapter B.1.3., the most relevant areas of legislation for the pharmaceutical industry seem to be a) patent law and the enforcement system, b) the marketing authorisation system and c) the pricing and reimbursement system. The comments on these three areas are described in this chapter.

1. Patents

(1083) With respect to the patent system, which is defined broadly so as to include patent litigation, substantive replies from 22 generic companies and 43 originator companies were received. The Commission's services also received submissions from the EGA and EFPIA. Other stakeholders made no or few observations with the exception of BEUC, the European Consumers' Organisation. The comments received are presented below by issue and by source of the comment, followed, where appropriate, by the Commission's services observations on the issue. A short overall conclusion on the regulatory framework for patents is given at the end of this section.

1.1. Absence of a Community Patent

Comments by Originator Companies

(1084) Almost all originator companies felt that the total cost of validating and maintaining a patent in all EU Member States is much too high, when compared to other countries like the USA or Japan. These costs are estimated at around € 55,000 for validation of a single, relatively short patent of 30 pages in all EU Member States.[406] They are estimated at € 8,000 per year on average[407] for maintaining that same patent in all EU Member States. Although the London Agreement on translations has the potential for significant savings in this respect, most of the states whose language is not in common

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406 This calculation is based on a patent with 20 pages of application, 5 pages of claims and 5 pages of drawings. The amount includes the patent fees of the EU's 27 national patent offices, agents' fees and translation costs for each Member State. Internal costs of patent owners are not included. The cost of obtaining the same patent at the EPO is around € 10,000 (about half of which consists of official EPO fees and the other half of agents' fees). This fee is generally considered reasonable by originator companies, given the amount of work involved in examining the patent application. It is therefore the subsequent formality of validation at the national patent offices that makes the European patent system expensive. Source: originator companies' replies to the Commission's requests for information.

407 This calculation is based on the renewal fees for the ninth year of the EU's 27 national patent offices plus an agent fee of € 25 per Member State. Internal costs of patent owners are not included. Again, it is the formality of annual renewal fees to be paid at each of the national patent offices that makes the European patent system very expensive. Source: originator companies' replies to the Commission's requests for information.

with one of the official languages of the EPO had maintained translation requirements to some degree.[408] Nor does the London Agreement solve the problem at source of why it would be necessary in the first place to obtain validation for a European patent in 27 EU Member States.

(1085) Despite the high costs of national validation and maintenance of a European patent, most originator companies said that nowadays they did normally obtain patent protection for their new products in all EU Member States. This cost of national validation and national renewal could be eliminated if a patent, once granted, automatically applied to the entire EU, by the introduction of a Community patent as proposed by the Commission.[409] According to some originator companies, that should ultimately lead to lower prices of originator medicines for consumers.[410]

Comments by Generic Companies

(1086) For generic companies, the fact that European patents granted by the EPO are subsequently transformed into a bundle of national patents is seen as a major problem, as these national patents are then enforced (or have to be challenged) in each Member State separately. As patents are often covered by multiple patents, trying to obtain market entry for a generic product can become very costly and time-consuming. In the words of the European Generic Medicines Association (EGA):

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408 EPO: National validation fact sheet at EPO website, at http://www.epo.org/patents/Grant-procedure/Filing-an-application/European-applications/European-applications/national-validation.html, 30 April 2008.

409 In its proposal for a Council Regulation on the Community patent COM(2000) 0412 final, the Commission proposed that the Community patent, once it has been granted in one of the procedural languages of the EPO (which would be the institution to examine Community patents) and published in that language, with a translation of the claims into the two other procedural languages, will be valid throughout the Community without any other translation. See the Communication from the Commission to the European Parliament and the Council - Enhancing the patent system in Europe, COM(2007) 0165 final, point 2.1.

410 Several originator companies said that, partly because of the high costs involved, they might not go through the trouble and expense of obtaining a patent in all Member States. In that case, some of them said they would be reluctant to actively market their products in Member States where they did not enjoy patent protection (especially if they also did not enjoy marketing exclusivity protection). While overall commercial considerations undoubtedly played the most important role in the decision as to whether or not to actively market in smaller Member States, it is clear that the "national patent cost" disincentive to marketing in such Member States would disappear if a Community patent could be obtained that was automatically valid and enforceable in the entire EU. Originator companies emphasised that, even if a particular medicine is not actively marketed in a particular EU Member State, it would still normally be available upon specific request for a patient.

"There are very few pharmaceutical products covered by a single patent on the product. A generics company may have to work through literally hundreds of patents and patent applications from the originator and other companies who are developing forms of that product, steering a precarious course through all of the potential issues. Multiplying the number of patents by the number of countries in which they can be enforced provides astonishing numbers and gives a clear indication of the extremely complex 'minefield' in which generic companies are operating".[411]

Observations of the Commission

(1087) The sector inquiry confirms that large originator companies nowadays usually validate their commercially important patents in all or most Member States. DG MARKT has done considerable work on the issue of the cost of obtaining and maintaining patents in Europe. It has estimated that a European patent designating only 13 out of the 27 Member States is about nine times more expensive than a USA or a Japanese patent if total costs are considered.[412] This fully confirms that national validation and renewal of European patents, including processing and translations that are still necessary in many Member States, are costly and burdensome for the patent holder. High costs may also preclude certain innovative companies – especially SMEs – from having their patents protected in all Member States. Both large and small originator companies would therefore significantly benefit from the creation of a Community patent. The same would be true for generic companies, as a Community patent would be automatically valid throughout the Community, thus replacing a bundle of 27 national patents.

(1088) In addition to the conclusion from the comments received that high costs resulting from the current European patent system are ample reason to call for the creation of a Community patent, the Commission would also emphasise that a Community patent would be a unitary title throughout the EU, with unified post-grant law and procedure ensuring consistency, legal security and a level playing field for all stakeholders in the patent system. Finally, it has to be recalled that the current fragmented patent system is seen as a major impediment to innovation in Europe and to its global competitiveness.

411 European Generic Medicines Association (EGA): Patent-related Barriers to Market Entry for Generic Medicines in the European Union, May 2008, page 18.

412 See Communication from the Commission to the European Parliament and the Council - Enhancing the patent system in Europe (COM(2007) 0165 final).

1.2. Absence of a Unified Judiciary

Comments by Generic Companies

(1089) Almost all generic respondents observed that the courts of different Member States regularly take divergent, indeed opposing views on the validity or scope of the same European patent, leading to considerable legal uncertainty.[413] There were also significant perceived disparities between Member States in the granting or denial of interim injunctions against alleged patent infringements. According to the EGA, some Member States granted interim injunctions too easily, especially in the case of secondary patents.[414] Finally, there was a demand to see patent cases handled by specialised and technically qualified patent judges, which it was said was not currently the case in all Member States.

(1090) Generic respondents also noted that there could be conflicting conclusions on the validity of a patent resulting from the EPO's opposition and appeal procedures, on the one hand, and from national courts, on the other. To avoid such divergences, some national courts did not give any ruling on the validity of a patent until the EPO had taken a definitive position. However, this was potentially worse for the generic company as it could then lead to years of delay in the national court procedure. Such legal uncertainty often prevented generic producers from marketing new generic products, given that they could be held liable retroactively should the originator company's patent ultimately be considered valid. The multiplication of national court procedures and the absence of the possibility of a (rapid) uniform binding ruling on the validity of a patent throughout Europe were therefore seen as major weaknesses of the patent system in Europe.

(1091) Many generic companies complained that they face high litigation costs brought about by originators' enforcement actions in each individual Member State in which generic companies tried to market new generic products. To counter or prevent such actions, generic companies also often felt obliged to bring non-infringement or invalidity procedures in individual Member States, increasing further their litigation costs. While originator companies could easily afford the legal expenses involved from the considerable income stream generated on the market by the product under challenge, generic producers, especially the smaller ones among them, were in a much weaker position as they did not derive any income yet from the new generic products they intended to market. As one generic company remarked:

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413 According to the European Generic Medicines Association (EGA), sometimes this even happens within a single Member State, for instance where regional courts maintain equal jurisdiction over patent matters. See EGA: Patent-related Barriers to Market Entry for Generic Medicines in the European Union, May 2008, page 22 and annex D thereto.

414 European Generic Medicines Association (EGA): Patent-related Barriers to Market Entry for Generic Medicines in the European Union, May 2008, page 20.

> *"The financial burden and the financial risk incurred by the generic company puts [the generic company] in a disadvantageous position as compared to the originator. The originator can employ the revenues from his monopoly to finance the patent disputes, whilst generic companies have to make an investment (additional to R&D, marketing, etc.) in a product of which they cannot be sure when they will be able to bring [it] on the market."*

Comments by the BEUC

(1092) The BEUC commented:

> *"The judicial system is very slow in many EU Member States and causes delay in the possible entry of generics in the market because of patent disputes."*

Comments by Originator Companies

(1093) Many originator companies agree with generic companies that a major weakness of the European system is the requirement to enforce European patents in different national courts, leading to high costs and potentially diverging decisions. Moreover, as EFPIA described:

> *"Further, failure to enforce a patent in one country can have significant negative impact in others; for example, because of national pricing and reimbursement rules. For example, if a company were not to enforce a patent against a generic company in one Member State, this could force it to reduce its prices in that Member State. […] this in turn can lead to a reduction of the prices in other Member States, which use international price referencing to fix prices, causing significant damage to commercial operations in those other Member States. That is the case even if the equivalent national patents in those other Member States are successfully defended."*[415]

(1094) Many originator companies also prefer to see their cases handled by technically qualified, specialised patent judges. Some explicitly ask for a "single patent court with EU-wide jurisdiction". Generic and originator companies therefore appear to have a common interest in the creation of a more efficient patent litigation system in Europe.

(1095) A number of individual originator companies and EFPIA submitted comments aimed at further strengthening intellectual property protection in the Member States. They considered, for instance, that it is too difficult and takes too long in some Member States to obtain interim injunctions against alleged patent infringements. Such injunctions are particularly important for originator companies in order to prevent rapid profit erosion due to the market entry of generic products and because the level of damages granted in the main proceeding was not always sufficient to completely compensate the patent holder for its commercial losses or to dissuade generic

415 EFPIA: Intellectual Property and Pharmaceuticals, June 2008, page 28.

companies from entering the market. At present there were seen to be too many differences in the interim injunction regimes of Member States. The effectiveness of legal actions to seize evidence also varied between Member States.

Observations of the Commission

(1096) The findings of the sector inquiry fully support the need to create a unified and specialised patent judiciary in the Community.[416] Section C.2.2. of this report shows that the number of patent litigations between originator and generic companies increased very substantially between 2000 and 2007, that patent litigation was often initiated in many different EU Member States simultaneously and that the average duration of a patent litigation was 2.8 years. The costs of such litigation between 2000 and 2007 for the 219 INNs investigated amounted to € 420 million for the parties involved. Section C.2.1. confirms that originator companies pursue litigation strategies aimed at imposing high litigation costs on small generic companies.

1.3. Opposition Procedure at the EPO

Comments by Generic Companies

(1097) While most generic companies welcomed the fact that this procedure existed at the EPO, a majority of them felt that the procedure as a whole (the opposition itself and any possible appeal arising from it) took far too long, causing continuing legal uncertainty in the market place.

Comments by Originator Companies

(1098) A significant point of agreement with generic companies was that many originator companies also felt that the opposition procedure and any appeal took (far) too long. As one originator company expressed it:

> *"The duration of the examination phase can take many years; however this is not necessarily problematic, since the development of pharmaceuticals also takes many years. However, it is a concern that opposition and appeal proceedings also typically take several years."*

(1099) Originators also had a common interest with generics in that they felt that unduly broad claims (of competitors) in patent applications should not be accepted. Originators used the opposition procedure to challenge such broad claims of competitors, but might also use national court procedures because in opposition procedures, in the words of one originator,

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416 See Communication from the Commission to the European Parliament and the Council - Enhancing the patent system in Europe (COM(2007) 0165 final).

"It will often take many years to determine an opposition, given the pace at which the EPO and its appeal procedures operate."

Observations of the Commission

(1100) The sector inquiry has confirmed that for the pharmaceuticals investigated, the opposition procedure lasted on average 3.6 years from initiation to final ruling (including an appeal where an appeal was made).[417] This long average duration of the opposition procedure considerably limits companies' perspective to clarify the patent situation efficiently.

1.4. On the Granting of Patents at the EPO

(1101) With respect to the process of granting patents, most pharmaceutical companies said that they had much more experience with the EPO than with national patent offices.[418] The comments below therefore focus on the granting procedure at the EPO.

1.4.1. Secondary Patents

Comments by Generic Companies

(1102) While generic companies considered the quality of the work of the EPO to be adequate or satisfactory overall, a number of examples were given of patents on pharmaceuticals which, in the view of many of the generic companies, were granted too lightly. These comments related in particular to secondary patents.[419]

(1103) According to generic companies, the purpose of such patent applications was often to extend the market position of the originator in respect of the existing treatment, for which they had enjoyed patent protection, with considerable commercial consequences. If the EPO granted these new patents on minor modifications of a medicine too lightly, the marketing efforts of the originator could ensure that doctors and patients switched to the new version of the product even before generic companies were allowed to enter the market with a generic version of the previously marketed product. Market demand for the latter would then drop significantly.

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417 For further details see Chapter C.2.3.

418 This includes both originator and generic companies. It should be noted that most generic companies regularly make third party observations on patent applications and participate in opposition procedures at the EPO. In particular, the larger generic companies also regularly file patent applications themselves at the EPO. A few originator companies remarked that, based on their limited experience, certain national patent offices did not make a detailed examination of novelty and/or inventive step.

419 For further details see Annex B.2: Patents for a description of the concept of secondary patents.

(1104) Generic companies felt that in this manner originator companies could succeed in "evergreening" their blockbuster medicines well beyond the protection period of the basic patent covering the active ingredient of the previously marketed product. As one company said:

> *"The European patent system allows the originator companies to keep adding patents (i.e. evergreening their products) to a product (whether legitimate or not), forcing the generic companies to choose between waiting for all the patents to expire and applying for marketing authorisation anyway, running the risks of litigation and the associated costs and delays."*

Another remarked:

> *"The entire point of the patenting strategy adopted by many originators is to remove legal certainty. The strategy is to file as many patents as possible on all areas of the drug and create a 'minefield' for the generic to navigate. All generics know that very few patents in that larger group will be valid and infringed by the product they propose to make, but it is impossible to be certain prior to launch that your product will not infringe and you will not be the subject of an interim injunction."*

(1105) Generic companies suggested that in particular in such situations, the EPO should examine the patent application closely before granting it. At present, it was felt by many respondents that the inventive step requirements for such patent applications were too easily considered as being met, partly because the EPO sometimes overlooked prior art[420] and partly because the EPO sometimes accepted, as part of their "problem-and-solution approach" to inventive step, claims from applicants regarding non-existent or obvious problems. One company went so far as to consider that there was an "unwritten benefit of doubt principle" at the examination stage.[421]

(1106) While under EPO rules a patent might always be challenged in the opposition procedure, or before national courts, the commercial reality was that once the patent was granted it was immediately enforceable before the national courts of the countries where the patent had been validated.

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420 There is no obligation under current EPO rules for the applicant to disclose the prior art known to it. Article 124 EPC merely allows the EPO to invite the applicant to provide information on prior art taken into account in national or regional patent proceedings concerning the same invention.

421 With respect to the opposition procedure, the Board of Appeal in case T 72/04 confirmed that each party normally carries the burden of proving the facts it alleges. But it also said that "in a case where the parties make contradictory but unsubstantiated assertions concerning facts relevant for establishing patentability and the EPO is not in a position to establish the facts of its own motion, the benefit of the doubt is given to the patent proprietor". See Special Edition No. 6, OJ EPO, 2007, page 35. This makes it all the more important that no such "benefit of the doubt" principle should operate during the examination stage.

Comments by the BEUC

(1107) The BEUC expressed the view that

> *"patent strategies can constitute barriers to the entry of new generic medicines into the market. We are very much concerned by the phenomenon of so-called "evergreening", which describes a specific tactic used by originators to extend patents by seeking to obtain as many patents as possible during the development of the product and the marketing phase, and to obtain a patent extension for new manufacturing processes, new coating and new uses of established products…Originators can also slightly change an active ingredient and present an old medicine as a new product and register a new patent.*
>
> *We consider that these practices are anticompetitive and prevent generics' entry into the market. They also incur higher health care expenditures and/or higher prices for consumers."*

(1108) Moreover, the BEUC wrote:

> *"We also think that the list of medicine properties eligible for patent should be stricter."*

Comments by Originator Companies

(1109) With respect to the functioning of the EPO, the general level of satisfaction among originator companies was high, considerably higher than among generic companies. Costs and the duration for granting or rejecting patents at the EPO were seen as reasonable and EPO searches were of a high standard. The examination of novelty and inventive step by the EPO was considered on the whole to be somewhat stricter than at the US Patent and Trademark Office (USPTO), with the degree of scrutiny at the EPO being considered satisfactory.[422] One originator company acknowledged:

> *"This [high quality of EPO examinations] is important as it is in the best interest of both originator and generic companies that only good quality patents are granted as this reduces the number of potential court challenges and results in increased legal and business planning certainty".*

(1110) Most originator companies did not share the comment by generic companies that the EPO tended to grant (secondary) patents too lightly.

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[422] One originator company commented: "The European patent system provides a strong possibility for third parties to challenge the patentability assessments by filing oppositions, which certainly has an impact on Examiners to provide a careful in-depth analysis before granting a patent. The possibility to file oppositions thus can be seen as a quality control of the examination procedure."

Observations of the Commission

(1111) The comment by generic companies that the quality of (secondary) patent applications by originator companies is not ideal is confirmed by the fact that the average grant rate for patent applications in the pharmaceutical field is lower than the EPO average. From the internal strategy documents of originator companies it transpired that they themselves consider their patent applications nowadays to be less solid.[423]

(1112) The Commission notes that recently the EPO has started to further increase its focus on quality. In the words of EPO President Alison Brimelow:

> *"What we need is not more patents, but more good patents. The EPO aims to make sure that the patents it grants are relevant. The lower number of patents published in 2007 reflects this priority and is a step in the right direction. Putting the emphasis on quality over quantity in the granting of European patents is a key strategy for safeguarding the proper functioning of the European patent system."*[424]

1.4.2. Deliberate Delays by Applicants

Comments by Generic Companies

(1113) Several generic respondents observed that originator companies sometimes seem to have an interest in creating and maintaining for as long as possible a maximum degree of legal uncertainty for potential generic market entrants. This may lead originator companies to file, in particular towards the end of the life of a basic patent, multiple secondary or divisional patent applications, possibly with overlapping substance matter and then to delay or obfuscate the handling of those applications, for instance by not immediately transmitting required information to the EPO or by making misleading representations.

(1114) These generic companies feel that the EPO should take stricter measures against such practices. As one of them said:

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423 See Chapter C.2.2. It should be noted that, perhaps in response to the secondary patent applications filed by originator companies, generic companies also file secondary patent applications themselves. On the quality of patents, see also Section 3.1 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: An Industrial Property Rights Strategy for Europe, COM(2008) 0465 final.

424 EPO press release to the 2007 Annual Report, 19 June 2008.

> *"Obviously, [originator company]'s strategy is to file numerous identical or practically identical divisional applications from one basic application – which has been found invalid [meant is: refused] by the EPO! – and keep them pending. Should the grant of one of them be denied, the other still pending applications are such a threat to the generic companies that many of them are extremely reluctant to enter the market. […] The grant [meant is: EPO decision on the patent application] can be delayed for years by [originator company]".*

Comments by originator companies

(1115) At least one originator company explicitly acknowledged:

> *"Pending applications filed with broad claims on commercially relevant subject matter often present a measure of uncertainty. […] The filing of divisionals before the EPO can extend uncertainty for several years."*

Most other originator companies did not comment on this issue.

Observations of the Commission

(1116) The sector inquiry has confirmed that originator companies file secondary and divisional patent applications as a strategy to prevent or delay generic entry and to create uncertainty for generic competitors as to whether they may develop a generic copy without infringing a potential patent.[425]

1.4.3. Third Party Observations

Comments by Generic Companies

(1117) Several generic companies suggested that during the examination of the patent application, the EPO should give greater attention to third party observations. Third party observations were a sign that a patent application had potentially important commercial consequences. Third parties do not, at present, receive any direct feedback from the EPO on whether and how their comments were taken into consideration. Nor can third parties or expert witnesses be heard at the examination stage.

[425] For further details see Chapter B.1.3

1.5. Patent Linkage

Comments by Originator Companies

(1118) Some originator companies suggested that if a generic company applied for a marketing authorisation, at least public notice thereof should be given. Ideally the granting of a marketing authorisation should be suspended where the owner of the reference product claims infringement of an intellectual property right, until such time as the matter is resolved by the national courts or the EPO (patent linkage).

Observations of the Commission

(1119) Linking marketing authorisation to the patent of the originator reference product is clearly not allowed under Community law. (see Subsection B.2.2.3.)

Summary

In their submissions, both generic and originator companies support the creation of a single Community patent to amend the current costly and burdensome system consisting of a bundle of national patents. They also favour the creation of a unified and specialised patent judiciary in Europe replacing the existing fragmented and costly patent litigation system run along national lines.

A significant number of generic companies - and to some extent also originator companies - call upon the EPO to ensure that patents granted are of high quality and to effectively counter patent strategies that may result in unnecessary delays.

The inquiry suggests that significant cost and efficiency improvements could be achieved by creating a Community patent and a unified patent judiciary (e.g. by avoiding the high number of essentially parallel court cases, divergent outcomes of cases and the costs associated with multiple national patents and national patent litigation).

2. Marketing Authorisation

(1120) This section summarises the main comments received from companies and other stakeholders regarding the marketing authorisation system for pharmaceuticals in Europe. Market participants seem to be facing a number of obstacles with regard to the marketing authorisation of pharmaceutical products. The pharmaceutical industry reported a number of problems common to all companies but also specific issues faced by either originator or generic companies.

(1121) In their responses to the sector inquiry, individual companies and trade organisations have identified issues in their interactions with national agencies and highlighted some discrepancies with regard to the EU regulatory framework. Differences in approaches existing in the international sphere, mostly between Europe and the USA, also amount to a burden for the industry during the development phase of their products. Finally, the different approaches to the disclosure of confidential information taken by different national authorities can have an impact on competition between originator and generic companies.

2.1. Shortcomings and Bottlenecks in the National Approval Systems

(1122) Several companies have reported market entry obstacles linked to the existence of bottlenecks in national systems. The industry was concerned mostly with delays in the procedures and to a lesser extent with the accessibility of slots needed to apply for a marketing authorisation evaluation.

(1123) Timing issues and lack of sufficient resources in the authorities concerned are mentioned as the key factors causing delays. Indeed, in some cases, companies can face delays and very late slot openings to submit their files. The time delays are encountered during both the Decentralised Procedure (DCP[426]) and the Mutual Recognition Procedure (MRP[427]) (in the validation phase, 'stop the clock' phase and post-procedure close) or during procedures concerning marketing authorisation for variation.[428]. Booking a slot to submit a file for a marketing authorisation can also be a problem for companies. Indeed, the possibility of slot booking are unequally spread across national agencies' schedules, with — in some cases — the first slots being available only from 2010. The bulk of the work is concentrated on a limited number of authorities.

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426 For further details see Chapter B.2.2.

427 For further details see Chapter B.2.2.

428 The marketing authorisation holder has to inform the marketing authorisation body of any 'Variation to the terms of a marketing authorisation'.

(1124) Three originator companies corroborated these general observations:

> *"The current Mutual Recognition and Decentralised Procedures are not improving patient access to medicines owing to the delays in initiating these procedures as a result of backlogs at the Competent Authorities. The legal deadlines for granting a marketing authorisation or 'vary its terms' as necessary to comply with consensus opinions or Commission's decisions are often not complied with."*
>
> *"The industry currently faces no compliance with the legal deadlines for granting a marketing authorisation or 'vary its terms' at the Member States level after the registration procedure has been finalised and the outcome is favourable. This creates uncertainties for the industry and has an impact on the availability of medicines or on the implementation of changes to the terms of the marketing authorisations in the countries concerned."*
>
> *"A recent survey among our affiliates revealed that considerable delays can be observed in registration procedures which particularly acts:*
>
> *- national line extension applications: validation phases often take several months to above one year before the actual review starts*
>
> *- all applications: delays are most often experienced in the national implementation phase due to lengthy discussions on texts but also pack designs resulting in delayed market access."*

While a generic company confirmed:

> *"The problem is that the majority of procedures (77%) are run by 4 Member States (DE, DK, UK, and NL). These Member States are considered to run the procedures most efficient. Due to this imbalanced situation applicants suffer from significant delays in obtaining a date for submitting an application to start a DCP. - Since generic medicines account for 80 % of all DCPs this problem mainly affects generic applications and puts generic product's market entry upon patent expiration at risk."*

(1125) The interest of companies applying for a DCP or an MRP in specific Member States and the popularity of certain agencies to act as Reference Member States could explain in part the imbalances outlined as regards delays. For instance, some agencies pointed out in mid-2008 that they are already "fully booked" for slot times in 2008 and 2009 where they act as Reference Member State in the DCP. Indeed, as highlighted by several companies, several agencies acting as Reference Member State have responded that they face certain capacity problems, mainly related to human resources. Some companies even mentioned that some national competent authorities tend to favour being involved in the centralised procedure.

One agency endorsed this:

> *"Yes, there are delays due to the heavy workload at the National Competent Authorities. Not all National Competent Authorities are currently willing to act as Reference Member State in MRP/DCP – therefore those agencies which are actively participating are fully booked one or two years in advance."*

An originator company stressed:

> *"In addition, national health authority resources seem to be stretched, with some health authorities announcing that they are fully booked as Reference Member State (RMS) for DCP/MRP for the next 18-24 months. This clearly represents a barrier to an innovative company wishing to use this procedure if they cannot nominate a reputed Health Authority of their choice as RMS."*

And a generic company emphasised:

> *"The role of Reference Member States is, for the most part, undertaken only by a small group of Member States, whereas other Member States hardly even act as a Reference Member State."*

(1126) Looking at the problem of slot access, two factors reported by the industry seem to explain the situation. Firstly, the lack of resources of certain agencies as already mentioned, and secondly — to a lesser extent —misuse by some applicants, who use various ways of making "unnecessary" bookings in order to delay access for other applicants.

Two generic companies stressed:

> *"The apparent misuse or perhaps abuse of the slot booking system should be investigated as a matter of urgency […]. In a recent request for a 2009 submission slot to a Member State for a product with patent expiry in 2010, we were offered in slot in January 2013."*
>
> *"With DCP's you have to book 18 months ahead to get a slot for a product and if you experience any delay in development you miss your slot and lose a year."*

2.2. Data Exclusivity

(1127) According to the contributions received from the industry, the European data exclusivity framework (commonly referred to as 8+2(+1) – for details, see Chapter B.2.2.) is well established. However, the major issue raised by companies in the current data exclusivity system remains the partial implementation of the Directive 2004/27/EC in several Member States. Some originator companies expressed concern at the shorter periods of protection for their data and market exclusivity for their products in some Member States, resulting in a lower return on their investment than might have been expected.

One originator company notes:

> *"All 27 members of the European Union should currently have implemented the harmonised "8+2+1" protection contained in the new pharmaceutical legislation. Nevertheless, four Member States have refused to incorporate the "8+2+1" protection into their national marketing authorisation laws. For those countries (Hungary, Latvia, Malta and Poland), data protection remains limited to 6 years for products authorised either through the Mutual Recognition Procedure, the new Decentralised Procedure, or their national procedures, and […] considers these situations as deviations from the requirements of European regulations."*

(1128) In addition, companies suggested building on this framework to improve access to medicines. Depending on the specific interests of originator and generic companies, the comments received were either in favour of extending or reducing the exclusivity period(s). Not surprisingly, originator companies would favour extending the data exclusivity framework as reward for innovation, in particular when additional indications for a pharmaceutical could be proven. On the other hand, generic companies would prefer shorter protection for new aspects of products considered less innovative, such as combination products.

Two originator companies suggested:

> *"The current data exclusivity rules do not encourage the development of new indications."*
>
> *"The data protection offered to new clinical indications is only one year for the first new "significant" indication and absent for any following new indication. This lack of protection for subsequent indications commercially limits companies' ability to make the usually significant investment needed for the development of such a new indication and creates a barrier to entry."*

2.3. Discrepancies in the Implementation of the EU Regulatory Framework

(1129) In general, pharmaceutical companies welcomed the further harmonisation resulting from the review of the European pharmaceutical legislation in 2004. Nevertheless, companies still have concerns linked to the fact that the EU regulatory system continues to appear fragmented (for instance in comparison to the USA). Stakeholders commented that the discrepancies in the implementation of the EU regulatory framework and other inconsistencies between national systems lead to burdens for pharmaceutical companies. Generic companies also mentioned problems related to the so-called Second Medical Use Patents under the Centralised Procedure.

(1130) Industry recognised that the existence of three different procedures, CP, DCP and MRP, and the 27 national agencies and the European medicine agency, provide a certain number of possibilities for marketing authorisation procedure applications in

comparison with the approach used in the USA.[429] Nevertheless, some companies considered that the EU regulatory system was creating more complexity than providing opportunity for their business.

An originator company comments:

> *"[The company] very much appreciates the successful development of the internal market and the regulatory procedures in Europe to achieve this. However, it has to be recognised that Europe remains a complex regulatory regime to operate in, with its mixture of centralised, decentralised and national controls. The FDA regulates a single country market whereas in Europe companies have to operate with the 27 Member States, the EEA countries, the different languages and residual differences in national requirements."*

(1131) Discrepancies between different regulatory agencies as regards the assessment criteria are of concern for companies. Despite the European regulatory framework, companies reported the increasing volume of data requested during the evaluation procedure and the need for duplicative assessments for certain national agencies. A number of companies suggested that more coordination should be developed among agencies. Part of the industry also called for further work in the definition of specific elements requested during the evaluation procedure. Indeed, some originator companies specifically expressed a need for Europe-wide consolidation of the requirements in the design of clinical trials. In addition, some originator companies expressed their interest in commonly validated biomarkers[430] and surrogate clinical endpoints[431] in order to minimise the duplication of clinical trials.

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429 In the USA, the FDA is the sole agency in charge of the assessment of applications for marketing authorisation.

430 A biomarker is a measurable characteristic that is an indicator of normal biologic processes, pathogenic processes, and/or response to therapeutic or other interventions. http://www.emea.europa.eu/pdfs/human/ich/43798606en.pdf.

431 In clinical trials, a surrogate endpoint or surrogate variable is a variable that provides an indirect measurement of effect in situations where direct measurement of clinical effect is not feasible or practical. http://www.emea.europa.eu/pdfs/human/ich/036396en.pdf.

Originator companies confirmed:

> *"Most authorities have increased the burden of efficacy and safety required to be demonstrated in order to obtain approvals."*
>
> *"The conduct of multi centre multi national clinical trials in Europe remains difficult and [the company] would welcome the earliest possible introduction of an optional centralised procedure for European multi- national clinical trials."*
>
> *"Implementation of the Clinical Trials Directive requirements is cumbersome, creates a great drain on resources and is not consistent across Member States. Member States have adopted different approaches in implementing the Directive, so the benefit of a single approach has been partially negated. More coordination, agreement on definitions and less country-specific requirements, which go beyond the Directive, is clearly needed."*
>
> *"There is a lack of validated biomarkers or surrogate endpoints accepted by authorities, which hinders development of highly innovative originators."*

(1132) The fact that applicants are requested by agencies to provide additional information over and above the regulatory framework can also lead to a number of obstacles for pharmaceutical companies. For instance, patent linkage (see Chapter B.2.2. for the definition of patent linkage) has been reported in some countries at the time generic companies submit a file. Some agencies request certification of non-infringement of the patent of the product while EU legislation does not require proof of such non-infringement for the granting of marketing authorisation.

Two generic companies noted:

> *"Some authorities require additional safeguards over and above the requirement to show bioequivalence to the originator product."*
>
> *"Decisions of national health authorities to grant marketing approval or reimbursement status to a generic product during the period of patent protection should continue to be made independently of the patent status of the reference product and should not be affected by the issuance of legal proceedings by an originator against a generic company unless so ordered by the nationals courts."*

(1133) Generic companies also reported obstacles not directly related to the implementation of the EU regulatory framework but created by so-called second medical use patents under the Centralised Procedure. Second medical use patents cover, for example, different new indications or different patient groups. Second medical use patents may differ from country to country. For example, an originator company may have obtained a marketing authorisation via the centralised procedure (EU27-wide) with a first indication which is not patent-protected and a second indication which is patent-protected in only a few Member States (this could be the result of a strategy or the fact that courts rejected the patent application in some Member States or different national patent expiry dates). The Summary of Product Characteristics (SmPC) of the originator product covers both indications.

(1134) When a generic company applies for a marketing authorisation under the Centralised Procedure using the originator medicinal product with two indications as a reference product, the SmPC of the generic product can either be the same as the originator product (two indications) or can cover a more limited number of indications. There is no problem obtaining a marketing authorisation with both indications (as national authorities granting the MA are not supposed to verify the patent situation). However, the problem starts when the generic company markets its products in the Member State where an originator company has a patent on the second indication. There may be patent infringement in those countries. One solution for this problem is to submit duplicate applications for the generic product (depending on the patent situation in different countries), but this creates additional costs and procedural requirements for generic companies.

(1135) Generic companies have highlighted the particular relevance of this issue for biosimilar medicines, which can only be approved under the Centralised Procedure. Some companies called for a change in legislation to allow approval of the full SmPC and the removal of the infringing product information only in the markets covered by use patents.

Two generic companies explained:

> *"For generic companies the key obstacle for using the Centralised Procedure is the "usage patent" issue, i.e. the fact that on the one hand it is mandatory in the Centralised Procedure to have an identical SmPC in all EU Member States, on the other hand there may be a patent-protected indication in individual countries."*
>
> *"Generic manufacturers are also dissuaded from seeking approval for products under the Centralised Procedure which are protected by national 'second medical use' patents."*

2.4. More Harmonisation at International Level

(1136) Companies, mostly originator companies, highlighted the importance of being able to design global strategies for the development of their pipeline, and, in this context, welcomed the international regulatory harmonisation that has already been achieved (in particular the initial outcomes of the International Conference for Harmonisation). However, the industry reiterated that differences in requirements for the development and marketing authorisation of pharmaceuticals in two major markets, the USA and the EU, can be a major burden for their business and called for further harmonisation of procedures and substantive criteria.

Two originator companies stress:

> *"At an operational level many of the challenges/regulatory barriers faced by the industry are similar in the EU and US, and reflect the nature of global drug development. This is why bi-and multi-lateral initiatives to harmonise regulatory requirements and practices (e.g. International Conference on Harmonisation, Transatlantic Cooperation in the Regulation of Pharmaceutical Initiative, Mutual Recognition Agreements, etc) are so strongly supported by industry."*
>
> *"Transatlantic regulatory cooperation under the EC, EMEA and FDA collaboration has allowed each side to share common experiences and gain an understanding of each other's regulatory system. However, little has been shown to indicate that each side strives to reduce unnecessary differences in regulations, reduce associated costs to the consumer and industry and reduce time to market."*

(1137) Scientific advice and the design of clinical trials are the two areas for further international coordination raised by industry.

(1138) The scientific advice is a crucial step in the development of a product since it offers the possibility for a company (1) to exchange information with a regulatory agency on the steps foreseen for the development of a product and (2) to receive an official scientific advice on the development process by the regulatory agency. Companies indicated that they were facing increasing differences between scientific advice from the USA and Europe, whilst more harmonisation/international consistency would be appropriate.

An originator company confirmed:

> *"Scientific advice is specific to the agency providing it, and opinions and requirements between agencies, esp. FDA and EMEA, often differ, which results in additional development time and burden (e.g. additional studies) on the originator company. Companies can seek Scientific Advice in parallel from FDA and EMEA, to reduce time for feedback into the development process, and also in the hope that FDA and EMEA might agree on development elements, and needs, thereby limiting the time and expenditure to secure successful applications in both territories. In practice the process has not worked effectively for industry and we continue to conduct programs to satisfy the separate needs of both agencies rather than being able to often find a shared agreement which could reduce overall development time and spend. FDA and EMEA attribute the lack of success of the parallel scientific advice process to industry's lack of enthusiasm. Industry views are that in the absence of a true joint advice from the two agencies there is little benefit in the current "parallel" advice process. Legal restrictions imposed on the agencies mean that a true joint scientific advice is not possible."*

(1139) As regards evaluation of the clinical efficacy of products, companies explained that the requirements expected for the clinical trials of the same product can differ between Europe and the USA. More specifically for paediatric studies, different requirements lead to USA and European individual paediatric study plans for the same product. The impact for the industry in terms of the number of clinical trials being launched and evaluation of the scientific data is significant. From what companies say, USA-Europe

streamlining of the clinical phase of the development of pharmaceuticals would help to lessen regulatory burdens.

Two originator companies reported:

"A further complexity is that it can be difficult registering in Europe a product already approved in the USA since there may be a lack of global consensus on the appropriate design of clinical trials."

"Another barrier to the entry is the recent European requirement for Pediatric Studies for new drugs and for new indications for existing products. […] There is no such comparable requirement in the US for new indications. For new drugs, there is a similar requirement, however, the pediatric studies required in the EU and in the US are usually very different. Accordingly, international companies often need to perform two separate Pediatric Study Plans, which require additional resources and create an additional barrier to entry."

2.5. Variations in National Rules Governing Access to Information

(1140) Transparency and disclosure of information on evaluation procedures of pharmaceutical products is applied according to national confidentiality rules. According to the EU regulatory framework for pharmaceuticals, information about a marketing authorisation is made public after the grant. Due to various confidentiality rules, some national authorities may already disclose information on a marketing authorisation application made by a generic company before the decision. It was reported that most of the requests for information come from originator companies about the application and evaluation of generic products. This may allow the originator concerned, for example, to react to the marketing authorisation application of the generic company and possibly initiate an action. Some generic companies complained about these differences in the Member States and stressed the impact early release of this information can have on them. Generic companies expressed concerns that greater involvement of originator companies in their marketing authorisation procedures could be used to delay the marketing of their products.

An industry association commented as follow:

> *"[originator company] did already know about generic MA's before they were granted: breach of confidentiality."*

A generic company reported:

> *"While we recognise the benefits for patients for increased transparency in some cases caution must be exercised in what type of information is released and at what time point during the generic registration procedure. […] In one MS it became apparent that a Brand company had information from our submission letter and information on e-mails giving responses to questions/commitments including the name of company personnel. We had not authorised release of these documents. […] Any data released on our applications pre-launch should be carefully considered and should only be done with the approval of the applicant/MAH."*

(1141) However, one agency stressed that, when contacted by originator companies, the contact is usually general, and that the originator already seems to know about the marketing authorisation applications.

An agency informed:

> *"Approaches by the "originator company" during the procedure may take place without certain knowledge whether an application by a "generic company" has actually been submitted. However, in most cases the originator company knows that an application by a "generic company" has been submitted."*

Summary

Companies, industry associations and agencies reported bottlenecks in the marketing authorisation procedures, which could lead to obstacles/delays and administrative burdens. The bottlenecks for all companies were allegedly created through the lack of adequate resources in certain agencies. Obstacles for generic companies were said to be created mainly by discrepancies in assessment criteria and by the fact that some regulatory bodies consider whether the generic product may infringe the originator company's patents (patent linkage) as well as by the disclosure of information to competitors. Patent-linkage is considered unlawful under Regulation (EC) No 726/2004 and Directive (EC) No 2001/83.

In particular, certain originator companies would support further international harmonisation of marketing authorisation procedures. Currently there are significant differences between the US and EU markets, e.g. regarding paediatric trials, leading to additional costs and delays. Some efforts are already undertaken in this respect.

3. Pricing and Reimbursement

(1142) This section summarises the main comments received from companies regarding the pricing and reimbursement systems for pharmaceuticals in Europe.

3.1. Delays in Access to the Market for Innovative Medicines

(1143) Originator companies primarily expressed concerns about the time taken by the competent authorities to grant pricing and reimbursement status for their medicines. These delays would shorten the exclusivity period during which costs can be amortised and a profit earned. It would also delay access for patients to innovative medicines.

(1144) In principle, authorities would be bound by the Transparency Directive (89/105/EEC) to take pricing and/or reimbursement decisions within 90/180 days. Nevertheless, several Member States are said to take significantly longer periods of time. Sometimes these authorities require additional information from companies before coming to pricing and reimbursement decisions, which can create part of the delays.

One originator company stated:

> *"In sum, varying and complex regulatory conditions in the EU, in particular pricing and reimbursement policies, faced by pharmaceutical companies cause significant delays in access to new medicines, and disparities in access to medicines among patients in individual Member States."*

Another originator company stated:

> *"Member States have widely differing variations in their national policies relating to pricing and reimbursement approval, and in the time taken to grant a marketing authorisation. Due to these significant differences in the timetable […] there can be serious consequences for the effectiveness of the distribution policies and in the availability of medicines to patients."*

A third originator company wrote:

> *"In contrast to the situation in the U.S., the delays for obtaining reimbursement in many EU27 Member States are often considerable, ranging from a few months to several years."*

(1145) In support of their claim originator companies referred to the bi-annual studies prepared by IMS on behalf of EFPIA which set out the delays between marketing authorisation and effective patient access to new medicines in different EU Member

States.[432] This so-called WAIT indicator reveals substantial differences in patient access to new medicines across the European Union.

(1146) Companies attribute part of the delays to price conversion within the EU, driven by pricing and reimbursement practices such as cross-border referencing (see Chapter C.2.3.). As a consequence an originator company would first aim to establish prices in Member States where they expect high prices. Only later, or not at all, would they apply for price/reimbursement decisions in the other Member States. Prices of innovative products would therefore be relatively similar in all Member States and in line with the prices obtained in the first, high-price countries, usually those with a higher GDP/capita. According to the originator companies, the high price levels limit the opportunity and volume of sales significantly in the Member States with a lower GDP/capita, where the medicines become unaffordable.

One originator company wrote:

> *"One Member State's national pricing rules may strongly interfere with another Member State's, through international and/or national reference pricing […]. This interference from country to country prevents the manufacturer from pushing for a tiered pricing approach within the EU common market."*

Another originator company wrote:

> *"The low prices may result in a negative income for these products in such [low income] markets, plus the possible export of these artificially low prices into other markets, as a result it is not possible to launch the products in such markets."*

A third company stated:

> *"The system of international reference pricing within Europe is also a problem. It means that pharmaceutical companies' negotiations with national payers feed over into other markets, which may face completely different circumstances."*

(1147) Another factor mentioned as creating delays is the trend towards fragmented decision-making at a more regional/local level, or even hospital level. This latter factor is driven by the increasing number of innovative medicines used in hospitals. This kind of fragmented decision-making requires additional negotiations with additional parties, which can create a further delay and result in higher transaction costs.

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[432] http://www.efpia.org/Content/Default.asp?PageID=517

One company mentioned:

> *"National reimbursement decisions are in many European countries only the first step (the condition sine qua non) in a variety of further negotiations with regional (e.g. in country A and B) and local (e.g. in country C) budget holders, or, in the case of product X, with individual hospital in some European countries. This adds further to the waiting period […]."*

Another innovative company wrote:

> *"The consequence is an unequal access of the European population to innovative medical care as documented in the report of the Swedish Karolinska Institute."*

(1148) In order to reduce delays in pricing and reimbursement decisions, and hence the unavailability of medicines, many companies call for the monitoring of implementation of the Transparency Directive to be tightened.

3.2. Uncertainty of Prices for Innovative Medicines

(1149) Originator companies also expressed concerns about the discrepancies of the national assessment systems to grant price and reimbursement status in the different Member States. This would significantly reduce the predictability of future prices and reimbursement levels and therefore complicate investment decisions. It would also lead to higher transaction costs.

(1150) The differences include data and information requirements, and timelines. Above all, the decision-making criteria are considered to be unclear, and therefore not offering sufficient guarantees for objective pricing and reimbursement decisions. Companies need significant resources to deal with these differences. While larger companies have these resources, it might force smaller companies to limit their activities to a selection of some (of the biggest) EU markets.

A major originator company stated:

> *"Some pricing and reimbursement decisions in Europe are extremely opaque. Criteria used by Member States are often limited to vague and ill-defined concepts without further specification or explanation to the point that they contravene the objectivity and verifiability requirements of the Transparency Directive."*

Another originator company wrote:

> *"The content of the national P&R filings varies widely within the 27 Member States. Local requirements […] lead to country-tailored applications. In practice, these differences require additional manpower and resources, and increase the time for readiness."*

(1151) In addition, Member States were reported to have different views on what they consider to be the "value added" of an innovative medicine. All Member States consider clinical/therapeutic progress. Many also consider benefits in the quality of life, although this is hard to measure objectively and thus to translate into prices or

reimbursement. In addition, a few Member States look at the broader economic benefits, such savings in hospital admissions, in particular when they have horizontal healthcare budgets, i.e. covering pharmaceuticals and hospitals jointly. These different expectations can be hard to understand and meet by individual companies within a single medicine.

(1152) Almost all EU Member States have started to rely on Health Technology Assessments (HTA) to measure the value of innovative medicines and to support their pricing policies. If applied clearly and consistently, HTA should help national authorities to reward exactly those innovations that offer most value to their national health policy. That said, HTA is still under full development. To date, it is often not yet clear, for example, how the value of an innovation is measured, what data are needed for this measurement and how this measurement is subsequently translated into a pricing and reimbursement decision.

An originator company stated:

> *"[…] However, HTA methodologies are still not advanced and mature to the extent that is required to fully capture the dynamic aspects of drugs. At the same time the scientific robustness of these methods is considerably over-rated."*

Another originator company wrote:

> *"Public authorities can also set unrealistic standards of proof for innovative products, as a de facto means of cost-containment through access restriction. To begin with, authorities may demand proof of efficacy at levels that clinical trials are not designed to provide, as a prerequisite for reimbursement."*

A third originator company mentioned:

> *"The absence of EU generally accepted HTA standards and requirements, and the variation in evaluation processes (ex-ante, ex-post) across countries and regions, increase cost and complexity to bring innovation to the market. A study, for example, that will lead to market access in Country X, may not meet the specific requirements for market access in country Y."*

(1153) Predictability in pricing and reimbursement, and hence certainty as regards the eventual reward, could be significantly increased through more cross-border collaboration between national competent authorities, e.g. EU collaboration on the development of common definitions of the expected value of innovative medicines, of common datasets, of common HTA methodologies and ultimately of common assessments; or making joint evaluations of the impact of P&R practices and exchanges of experiences between Member States.

One originator company suggested the:

> *"Definition of a common set of data at the EU level to support P&R (to be complemented ideally with national data when available)."*

(1154) Some companies have suggested organising early dialogue between pricing and reimbursement decision-makers and companies to clarify the expected value and required proof of this value, and thus to reduce uncertainty.

> *This originator company also suggested the "Possibility to discuss with P&R decision makers, during the clinical development phase, the data necessary to reasonably reduce uncertainty."*

(1155) Finally, tighter monitoring of the implementation of the Transparency Directive (Directive 89/105/EEC) is suggested.

3.3. Delays in Access to the Market for Generic Medicines

(1156) Producers of generic medicines also expressed concerns with respect to delays in pricing and reimbursement decisions. These delays do not only postpone access for patients and reward for the generic company, they also prolong the exclusivity period for the originator. Originator companies are therefore often mentioned as the drivers behind delays in pricing and reimbursement decisions for generics. These concerns are covered in the earlier chapters of this report, in particular Chapter C.2.5. Generic companies also expressed concerns, however, with the regulatory system as such.

(1157) For some observers the issue of patent linkage at pricing and reimbursement level is a particular concern. The table below provides a few examples of patent linkage at pricing and reimbursement level in the EU reported during the sector inquiry and embedded in the local pricing and reimbursement regulation.

Table 36: some examples of patent linkage at pricing and reimbursement level in Europe

Germany	Authority to organise administration to enter market and obtain reimbursement	One of the new clauses obliges each applicant for a generic product to prove its patent-free status, namely by accompanying the application with written consent or confirmation from the respective originator company concerning status.
Hungary	Pricing & Reimbursement bodies	Authorities require generic companies to make a statement about the patent status as part of a regulatory submission. Originator companies claim infringement of their patent rights and block the reimbursement procedures.
Portugal	Authority in charge of pricing Courts	The body in charge of price approval (Ministry of Economy (DGAE)) has a policy of not granting price approval for pharmaceutical products where a litigation case is pending. As a result, factual market introduction is delayed for several months. (Originator companies also take legal action against certain price approvals and reimbursement decisions.) Altogether, more than 50 court cases are currently pending.

Source: Pharmaceutical Sector Inquiry

(1158) Alleged claims of potential patent infringements can delay the decision-making process on prices and reimbursement levels for the generic product. According to several companies, some Member States' pricing and reimbursement authorities prefer to wait until the situation is clarified.

(1159) Another potential obstacle for generic entry lies in the need for absolute equivalence between generic versions and the originator, requested by pricing and reimbursement authorities in some Member States in order to allow substitution. These requirements go much further than the bio-equivalence requested for marketing authorisations, and can include, for example, identical pack sizes, identical doses, identical patient information leaflets and/or identical summaries of product characteristics.

A generic company stated:

> *"Some authorities require additional safeguard over and above the requirement to show bioequivalence to the originator product. For example, competent authority of country A have a much stricter requirement for equivalence for some products meaning that such products are effectively of limited interest in those markets event though they are freely substitutable in other markets in the EU."*

Another generic company stated:

> *"The (country A) sickness fund is much stricter regarding the bioequivalence studies than the Health Authorities. Therefore sometimes registered generic products will not be reimbursed."*

A third generic company wrote:

> *"Law X in country A limits interchangeability of certain generic medicines and thus limits reimbursement. However the revision of legislation is being prepared."*

(1160) In these Member States originator companies therefore have a tool to delay the introduction of generic versions, and thus prolong their period of exclusivity, through minor last-minute changes to the originator product, e.g. to pack sizes (e.g. from 28 to 30 pills) or to the text of the patient information leaflet.

One generic company mentioned:

> *"Originators have a tendency to launch new formulations or broaden indications just before patent expiry. The pattern is that is it more common for big products than for small products. This effectively protects their sales/market shares and delays launch of generics. Often these new formulations are approved by price authorities and recommended. In this way the substitution to generics is not granted and could even be that is not allowed until the generic has received approval for the broader indication."*

Another generic company wrote:

> *"Originator product A caps switched to tabs 3-4 months before fall of patent with caps and tabs not substitutable regarding the national substitution list."*

A third generic company stated:

> *"It is common for an innovator to change its product strength very near to the end of its patent life in order to prevent or delay generic entry."*

(1161) As for remedies to these delays in pricing and reimbursement decisions, and hence the unavailability of medicines, some suggest introducing automatic pricing and reimbursement procedures for generic products, based on equivalence with the originator product. Some Member States have such automatic procedures in place, and as a consequence generic competition and related savings start as soon as possible. While this is generally to be viewed favourably, the risk of creating a new state-induced price level for the generic version of the medicine (see also the section below) needs to be avoided.

(1162) Others suggested limiting the liability and potential consequences of patent infringement exclusively to the manufacturers. This would allow all other parties involved (e.g. pricing and reimbursement authorities, wholesalers, pharmacists) to process all generic medicines. In the case of a proven infringement, the consequences would be settled between the manufacturing parties.

(1163) Some stakeholders also suggested considering the equivalence between generics and originators to be sufficiently proven once the marketing authorisation is granted.

(1164) In addition, it has been suggested that decisions on equivalence and substitutability should also be subject to the Transparency Directive (Directive 89/105/EEC).

3.4. Uncertainty of Prices for Generic Medicines

(1165) One of the key concerns expressed by generic companies is price linkage between prices of generics and originators (for a description of this practice, see Chapter C.2.3.).

(1166) Price linkage can give the originator company an effective tool to influence the prices of its generics competitors. The originator can thus force down the prices of generic competitors to a level where it is no longer profitable for them to sell the generic version. Of course, price reductions are in any case to be expected once generic versions enter the market. It is therefore difficult to identify the exact reasons behind sharp price reductions by the originator company, particularly if they are not sustainable.

A generic company wrote:

> *"This system enables originator companies to force generic pharmaceutical companies off the market by constantly lowering prices of branded products."*

3.5. Comments on Specific Supply and Demand Side Practices

(1167) As explained in Chapter C.2.3., many Member States apply multiple practices to control spending on pharmaceuticals. Some of them are the subject of concern for pharmaceutical companies.

(a) Therapeutic Reference Pricing

(1168) The concern voiced most strongly by originator companies is the introduction of so-called "jumbo groups", which contain a list of all equivalent and substitutable medicines reimbursed at the same level.

(1169) Most Member States consider medicines to be equivalent and substitutable only when they have the same active ingredient, the ATC-5 level (some Member States have even stricter requirements for equivalence, see above). This means that therapeutic reference pricing usually applies when the originator is off-patent and generic versions enter the market.

(1170) Nevertheless, some Member States are less strict in their definition of equivalence and consider that medicines with related active ingredients are also substitutable (ATC-4 level, as applied in particular in Germany). This creates much larger groups of medicines (also called clusters) all subject to the same amount of reimbursement (jumbo groups). These groups can also include patent-protected products of originators as well as off-patent originator products and their generic versions. The presence of these generic versions will significantly reduce the level of reimbursement for all medicines in the group, including the products still covered by exclusivity. This is considered to be a lack of recognition of the (incremental) added value provided by this last group of medicines.

(1171) Another concern relates to the establishment of the standard amount of reimbursement per group. It is often suspected that all competitors will align their prices on this

amount, which will thus take away any incentive for further competition and reductions in the official list prices, although competition can continue vis-à-vis pharmacists, thereby reducing pharmacy purchase prices.

(1172) Generic companies on the other hand prefer broad groups of substitutable reference products, thus extending the potential market of a generic. They claim that originators try to restrict the scope of reference groups.

An originator company wrote:

> *"Reference pricing restricts competition by creating artificial price floors at non-competitive price levels. The most extreme example of market failure in this respect is the creation of very broad therapeutic categories of medicines, including both in-patent products and off-patent/generics, to derive an average reference price. This pulls down the price of innovative products but artificially lifts the price of generics. Apart from undermining intellectual property by rewarding imitation while artificially penalising breakthrough innovation and the benefits of incremental innovation, these systems reduce patient access to the newest and best medicines, and those medicines best suited to individual patient needs. Competitive pricing should thus apply to off-patent products, which would stimulate the development of dynamic and competitive off-patent markets."*

A generic company mentioned:

> *"Patent owners have also appealed to the Courts in an attempt to suspend or prohibit the creation of homogenous groups and reference prices for generic medicines. The homogenous groups and the reference prices are automatically suspended for months by the simple fact that the administrative preliminary injunctions are filed in court."*

(b) Restrictions in Use

(1173) Some authorities complement their pricing and reimbursement decisions with rules on the use of a new medicine. These rules often include conditions that may significantly reduce the potential patient population. In other cases, the rules require a lot of additional administration from doctors in order to obtain specific approval for reimbursement, which restricts the uptake of these innovative medicines.

A major originator company wrote:

> *"Many new prescription medicines are subject to complex reimbursement conditions. They [doctors] are therefore discouraged from informing their patients about new products. As a result, it is hard for potential entrants to differentiate their prospective new products from existing (but potentially inferior) treatments within the same therapeutic class. This restriction disproportionately disadvantages new innovative products at the expense of old and familiar ones."*

Another originator wrote:

> *"The use of therapy guidelines and formularies prevents the use of new products or restrict the usage of the originator to an extremely limited group of patients (sub-groups of the population) is perceived as an entry barrier in some countries."*

(1174) It has been suggested that such decisions on restrictions in use should also be subject to the Transparency Directive (Directive 89/105/EEC), thus making the application of such restrictions more objective and verifiable.

(c) Payback

(1175) Payback is applied when more medicines are sold than anticipated. Companies will have to return most of these extra sales to the funding authorities. It is seen as an inverse incentive by companies as, from a business point of view, it is a punishment for being successful in the market. In some cases, it may even increase competition between individual companies to sell as much as possible, knowing that all other companies are doing the same and that in the end they all might have to pay for the success of an individual company.

An originator company wrote:

> *"[…] whereby biopharmaceutical companies are required to repay a fixed percentage of the revenue generated and which may be conditional on whether thresholds are met (e.g., an overrun of the national healthcare budget or companies exceeding certain pre-determined sales volumes). The negative impact of such arrangements is considerable."*

Another originator company wrote:

> *"[…] implemented by some Member States it is highly punitive and often applied ad hoc and thus disruptive of business planning. These are budget management tools that disproportionately penalise industry for budget overspend."*

Summary

Originator companies complained in particular about delays and uncertainties created by national pricing and reimbursement procedures. They argued that this would shorten the period during which they enjoy exclusivity and consequently reduce their expected reward. Originator companies attributed the delays and uncertainties amongst others to the fragmentation of the national decision making-process, the increasing use of health technology assessments and the wide-spread use of cross-border reference pricing systems.

Delays are also the main complaint of generic companies. They argue that these delays result not only from the decision making procedures, but often also from the additional requirements for obtaining pricing and reimbursement status for generic medicines, e.g. information on the patent status or concerning complete equivalence between the originator and generic product. These additional requirements seem to give opportunities for originator companies to intervene and hence prolong the de-facto exclusivity period of their product.

Finally, concerns were expressed by originator companies about specific practices to control expenditure, in particular therapeutic reference pricing (and the inclusion of patented products). Generic companies on the other hand would support the wider use of this practice, as it can facilitate market entry for generic products.

E. CONCLUSION AND LAUNCH OF PUBLIC CONSULTATION

The pharmaceutical sector is vital to the health of Europe's citizens. Europe's patients need access to safe, innovative and affordable medicines. The market for prescription and non-prescription medicines is worth over € 138 billion ex factory and € 214 billion at retail prices. This translates into an average retail expenditure of approximately € 430 for each EU citizen in 2007.

In January 2008 the European Commission launched a sector inquiry into EU pharmaceuticals markets under the EC competition rules (Articles 81 and 82 of the EC Treaty) because information relating to innovative and generic medicines suggested that competition may be restricted or distorted. This was indicated by a decline in innovation measured by the number of novel medicines reaching the market, and instances of delayed market entry of generic medicines, as compared to what might be expected. This Preliminary Report confirms the decline of new chemical entities reaching the market and the delays of generic market entry and highlights some of the possible causes.

The Preliminary Report does not seek to identify wrongdoing by individual companies or to reach any conclusion as to whether certain practices described in the report infringe EC competition law. It provides the Commission with a factual basis for deciding whether further action is needed.

The inquiry relates to the period 2000-2007 and involves investigation of a sample of 219 medicines. The main findings set out in this Preliminary Report relate to:

Competition between Originator Companies and Generic Companies

The preliminary report emphasises that patents are key in the pharmaceutical sector, as they allow companies to recoup their often very considerable investments and to be rewarded for their innovative efforts.

The report also finds that originator companies have designed and implemented strategies (a "tool-box" of instruments) aimed at ensuring continued revenue streams for their medicines. Although there may be other reasons for delays to generic entry, the successful implementation of these strategies may have the effect of delaying or blocking such entry. The strategies observed include filing for up to 1300 patents EU-wide in relation to a single medicine (so-called "patent clusters"), engaging in disputes with generic companies leading to nearly 700 cases of reported patent litigation, concluding settlement agreements with generic companies which may delay generic entry and intervening in national procedures for the approval of generic medicines. The additional costs caused by delays to generic entry can be very significant for the public health budgets and ultimately the consumer.

The sector inquiry confirms that generic entry in many instances occurs later than could be expected. For a sample of medicines under investigation which had lost exclusivity in 2000 to 2007 the average time to enter after loss of exclusivity was about seven months on a weighted average basis, whereas also for the most valuable medicines it took about four months. On average, price levels for medicines in the sample that faced loss of exclusivity in the period 2000 – 2007 decreased by almost 20% one year after the first generic entry. However, the decreases in price levels were as high as 80-90% in rare cases for some medicines in some Member States. Based on the sample of medicines under investigation that faced loss of exclusivity in the period 2000 – 2007, representing an aggregate post-expiry expenditure of about € 50 billion over the period (in 17 Member States), the preliminary report estimates that this expenditure would have been about € 14 billion higher without generic entry. However, the savings from generic entry could have been about € 3 billion more, further reducing expenditure for these medicines by more than 5%, if generic entry had taken place without delay.

Competition between Originator Companies

The preliminary findings of the inquiry also suggest that originator companies develop and practise defensive patenting strategies primarily in order to block the development of new competing products. This can lead to obstacles to innovation, in form of higher costs for competing pharmaceutical companies (e.g. for royalties), or in delays.

The Regulatory Framework

In the context of the inquiry stakeholders made a significant number of comments on the regulatory framework, highlighting perceived difficulties and shortcomings. Generic companies and originator companies are in agreement over the need for a single Community patent and the creation of a unified and specialised patent judiciary in Europe. The preliminary findings of the inquiry support these views. Different stakeholders also highlight what they perceive as bottlenecks in the procedures for approval and marketing of medicines (including pricing and reimbursement status), which may contribute to delays in bringing products to market.

Procedure for Making Comments

Anyone interested in commenting on this Preliminary Report is invited to do so. All comments should be made in writing and should arrive at DG Competition of the European Commission no later than 31 January 2009. All comments should be sent by e-mail to the following e-mail address: COMP-SECTOR-PHARMA@ec.europa.eu.

Respondents are strongly encouraged to limit their comments to a maximum of 20 pages to allow for efficient consideration of the feedback by the Commission. Each respondent should endeavour to make a single submission only, ideally in English, French or German, the internal working languages of the Commission.

Respondents are advised that their contributions may be published on the Commission's website, unless the submission contains business secrets or other confidential information. Please indicate in your submission whether you consider it to contain business secrets or other confidential information. If so, please provide

together with the submission a non-confidential summary of the information concerned.

The Final Report of the sector inquiry is expected in the spring of 2009.

ANNEXES

Annexes to Chapter A

Annex EC Competition Law

Introduction

(1) In order to facilitate the understanding of the legal framework for this report, the EC competition rules are described in this annex.

(2) The goal of the Community's competition rules is to foster and maintain effective competition in the common market for the benefit of European consumers. The main rules are contained in the EC Treaty (Articles 81 and 82 EC), but there is also secondary legislation. Guidance is furthermore provided through Commission guidelines and individual cases creating important precedents. The application of the EC competition rules by the Commission, national competition authorities and national courts is subject to the control of the European Court of Justice. A sound economic analysis is required when applying the competition rules.

(3) It should be noted that the purpose of the report or this annex is not to carry out a competitive assessment of any of the agreements or company practices described. Such an assessment would require a case by case assessment taking into account all relevant facts.

Article 81 of the EC Treaty

(4) Article 81(1) EC prohibits as incompatible with the common market all agreements between undertakings or concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market. The agreements covered by Article 81(1) can be horizontal (i.e. actual or potential competitors active at the same level of trade) or vertical in nature along the respective supply chain (e.g. production, wholesale, retail).

(5) Article 81(1) EC prohibits in particular such agreements, decisions or practices which directly or indirectly fix purchase or selling prices or any other trading conditions, which limit or control production, markets, technical development, or investment, which share markets or sources of supply, which apply dissimilar conditions to equivalent transactions with other trading parties, and/or which make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which

have no connection with the subject of such contracts. The restriction of competition must be appreciable.[433]

(6) Article 81(3) EC provides that agreements and concerted practices which are covered by Article 81(1) EC can be compatible with EC competition law if four cumulative conditions are met: (1) the agreement or practice in question contributes to improving the production or distribution of goods or to promoting technical or economic progress, (2) it allows consumers a fair share of the resulting benefit, (3) it does not impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives and (4) it does not afford the possibility of eliminating competition in respect of a substantial part of the products in question. The burden of proof that the conditions of Article 81(3) of the Treaty are fulfilled rests with the parties concerned.[434] Under Article 81(2) EC agreements and practices covered by Article 81(1) EC but not by Article 81(3) EC are prohibited and automatically void.

Article 82 of the EC Treaty

(7) Article 82 EC provides that any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it is prohibited as incompatible with the common market in so far as it may affect trade between Member States.

(8) Such abuse may consist of the following: a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions, b) limiting production, markets or technical development to the prejudice of consumers, c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage, d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which have no connection with the subject of such contracts. It goes without saying that abuse cannot be argued to exist if there is objective justification for the behaviour.

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433 Commission notice on agreements of minor importance which do not appreciably restrict competition under Article 81(1) of the Treaty (OJ C 368, 22.12.2001, p.13). Available also at http://ec.europa.eu/comm/competition/antitrust/legislation/deminimis.html.

434 Article 2 of Council Regulation No 1/2003 of 16 December 2002, on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty (OJ L 4.1.2003, pp.1-25), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/regulations.html.

Council Regulation (EC) No 1/2003

(9) This regulation sets out the rules for the Commission to enforce Articles 81 and 82 EC. It entered into force in 2004 and eliminated the possibility of notifying agreements to the Commission. It allows decentralised application of European competition law by national competition authorities and courts.

(10) Article 17 of the regulation authorises the Commission to conduct an inquiry into a particular sector of the economy where prices or other circumstances suggest that competition may be restricted. The present inquiry is based on this provision. Within the context of a sector inquiry, the Commission disposes of most investigative powers, including information requests and inspections.

Commission Regulations concerning the Application of Article 81 EC ("block exemptions")

(11) The Commission has adopted so-called block exemption regulations (BER) by which it declares Article 81(1) inapplicable to certain categories of agreements, decisions and concerted practices. The BER provide 'safe harbours': if an agreement falls within its scope and does not contain hard core infringements, companies can be confident that their agreement can be considered compatible with EC competition law. For the assessment of pharmaceutical companies' agreements and practices, in particular the Block Exemption Regulation on Technology Transfer (TTBER),[435] the Block Exemption Regulation on research and development[436] and the Block Exemption Regulation on vertical agreements,[437] may be relevant.

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435 Commission Regulation (EC) No 772/2004 of 27 April 2004 on the application of Article 81(3) of the Treaty to categories of technology transfer agreements, (OJ L 123, 27.4.2004, pp. 11-17), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/transfer.html.

436 Commission Regulation (EC) No 2659/2000 of 29 November 2000 on the application of Article 81(3) of the Treaty to categories of research and development agreements (OJ L 304, 5.12.2000, pp. 7-12) available also at http://ec.europa.eu/comm/competition/antitrust/legislation/horizontal.html.

437 Commission Regulation (EC) No 2790/1999 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices (OJ L 336, 29.12.1999, pp. 21-25) available also at http://ec.europa.eu/comm/competition/antitrust/legislation/vertical.html.

Commission Guidelines on the Application of Article 81 EC

(12) The Commission has adopted guidelines on the applicability of Article 81 to horizontal cooperation agreements,[438] to vertical agreements[439] and to technology transfer agreements.[440] Agreements whose purpose is to restrict competition are presumed to have negative effects. For other agreements an analysis of the effects is necessary. It is also recognised that horizontal cooperation can lead to substantial economic benefits.[441] The guidelines are without prejudice to the possible parallel application of Article 82 of the Treaty. There are also general guidelines on market definitions, the application of Article 81(3) EC and the effect on trade between Member States.[442]

EC Competition Law and Intellectual Property Rights

(13) EC competition rules do not call the existence of intellectual property rights into question. However, the exercise of intellectual property rights can be assessed on the basis of competition rules. The exercise by a company of its intellectual property rights can amount to an agreement restricting competition under Article 81 EC or an abuse of a dominant position under Article 82 EC. A relevant example of application of Article 82 in the pharmaceutical sector is the AstraZeneca case where the Commission concluded that the company was abusing its dominant position when it deliberately made misleading representations to national patent offices and national courts with a view to obtaining a longer protection period for its patented product than to which it was legally entitled.[443]

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438 Commission Notice - Guidelines on the applicability of Article 81 to horizontal co-operation agreements, (OJ C 3 of 06.01.2001, p. 2), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/horizontal.html.

439 Commission notice - Guidelines on Vertical Restraints, (OJ C 291, 13.10.2000, p.1), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/vertical.html.

440 Commission Notice- Guidelines on the application of Article 81of the EC Treaty to technology transfer agreements, (OJ C 101 of 27.04.2004, p. 2), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/transfer.html.

441 Commission Notice - Guidelines on the applicability of Article 81 to horizontal co-operation agreements, (OJ C 3 of 06.01.2001, p. 2), available also at http://ec.europa.eu/comm/competition/antitrust/legislation/horizontal.html.

442 For further details see http://ec.europa.eu/comm/competition/antitrust/legislation/legislation.html.

443 Commission Decision of 15 June 2005 in Case COMP/A.37.507/F3 – AstraZeneca. See also Commission Decision of 24.03.2004 in Case COMP/C-3/37.792 – Microsoft. Available also at http://ec.europa.eu/comm/competition/antitrust/cases/index.html, which in the meantime has been confirmed by the Court of First Instance.

Annex: Methodology

Introduction

(1) In order to understand certain aspects of this report, it is important to be aware of the main features of the methodology used in the sector inquiry. Therefore, an overview of these features is provided in this annex.

(2) This first part of the Annex presents the general methodology applicable to the whole report. It describes how the information was collected. In this context, the focus lies on the methodological aspects relating to the surprise inspections and the requests for information which were used as investigative tools[444] in the sector inquiry. The annex then goes on to explain how the information was processed.

(3) The second part of the annex provides more specific information on the methodology used in the chapter on "Impact of Generic Entry".[445]

General Methodology

Collection of Information

(4) The information on which the report is based stems from surprise inspections, requests for information, submissions by stakeholders and specialised agencies and offices (e.g. EPO) and publicly available information. All the information was gathered with a view to assessing *"the introduction of innovative and generic medicines for human consumption onto the market"*.[446]

Inspections

(5) The Commission's services carried out surprise inspections in January 2008 at the premises of a number of carefully selected originator and generic companies.

(6) In the context of inspections, the Commission's services gather information which may be available in paper or electronic form at the inspected company. It may also conduct interviews where company representatives provide the information orally on the spot.

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444 Information on the methodological aspects of investigative tools are given to the extent possible, bearing in mind that the Commission does usually not reveal details of, for example, the concrete use of such a tool in any given case.

445 For further details see Chapter B.1.3

446 For further details see Commission decision of 15 January 2008, available at: http://ec.europa.eu/comm/competition/sectors/pharmaceuticals/inquiry/decision_en.pdf

Requests for Information

(7) Following the opening of the sector inquiry and the inspections, stakeholders (e.g. associations of originator and generic companies) were informed of the sector inquiry and were given the opportunity to submit their comments and observations. Subsequent to this, requests for information pursuant to Article 18 of Regulation (EC) 1/2003 were sent to the stakeholders. The bulk of these requests for information were dispatched in the period from March to May 2008. The requests were general in the sense that they were designed to collect information very broadly from a wide variety of stakeholders.

(8) The following categories of stakeholders were addressed: originator companies, generic companies, wholesalers, parallel traders and a number of associations (representing patients, consumers, wholesalers, parallel traders, medical doctors, public hospitals, private hospitals, hospital pharmacists, private pharmacists), IMS Health (a provider of pharmaceutical data services), national competition authorities and national ministries of health, plus marketing authorisation authorities at European and national level. Contributions were also received from EFPIA and EGA, representing the originator and generics industry respectively.

(9) Within each category of stakeholders, the addressees receiving the requests for information were selected on the basis of criteria such as the scope of their activity enabling them to refer to the pharmaceutical sector at national and European level.

(10) In the light of the above, the Commission also obtained data and other information from IMS Health, which is cited or used in this report (including in empirical analyses performed by the Commission's services). IMS Health has not acted as an advisor, expert or consultant in connection with this report or, more generally, in connection with the sector inquiry.

(11) In total, approximately 200 requests for information were sent.[447] In particular, 46 originator companies and 39 generic companies received requests for information. Over the course of the sector inquiry, a number of companies were excluded from the sample of addressees. This was necessary, for example, when a company could credibly explain that it had minimum involvement or that its activity did not focus on medicines for human use (e.g. three originator companies and twelve generic companies were excluded). The overall return by stakeholders in terms of responses received by the Commission's services was high, despite the challenging deadlines that the stakeholders had to meet.

(12) The general questionnaires asked for very detailed information on a variety of relevant issues, including, for example, general market conditions, economic data, products, patents, litigation, patent-related disputes and contacts, agreements and arrangements in the sector, stakeholders' experience with the legal and regulatory frameworks.

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447 This number includes cases where more than one request for information was sent to the same addressees.

(13) The addressees were asked to provide the information in electronic tables relating to the questionnaires. In instances where the information could not be inserted into tables, they were asked to provide textual responses. Some of the questions also required the submission of documents (e.g. originator companies' key documents on patent strategies), in order to further substantiate the responses.

(14) For certain questions, the information requested concerned all INNs[448] in which, for example, a stakeholder is "active"[449], and for others, only 219 selected INNs (e.g. all litigation relating to any of these 219 INNs was requested). A full list of the 219 INNs can be found at the end of this annex.

(15) The 219 INNs for which certain information was requested were selected as follows:

(16) A first group of INNs was selected by considering, in three Member States (France, Germany and the United Kingdom), the 75 top-selling INNs that faced the loss of exclusivity (e.g. patent/IP expiry, data exclusivity) in the period 2000 – 2007. In each Member State, this list of 75 INNs represented, in value terms, well over 90% of sales of all INNs that faced loss of exclusivity in the period 2000 – 2007. The combination of the top 75 molecules in each of these Member States provided a final list of 128 INNs. This list is referred to as "E75".

(17) A second group of INNs was chosen from the list of the 50 top-selling INNs (whether protected or not) for each of the three Member States mentioned above. In total, this led to the identification of 90 INNs (of which 61 INNs were not already part of the E75 list). It is referred to as "T50".

(18) A third group of other INNs was selected considering the 50 top-selling INNs having faced (possible) first generic entry in each of the selected countries, obtaining a total of 95 INNs (30 new INNs in comparison with the E75 and T50 lists mentioned above). Finally, the list contained a number of INNs that might be of interest in the light of other market information available to the Commission.

(19) The combination of these three subgroups, with a view to obtaining a robust sample of INNs likely to be representative for the EU as a whole, makes up the final list of 219 INNs.

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448 Pharmaceutically active molecules can be accorded an international non-proprietary name (INN), administered by the World Health Organisation (WHO), which is considered as the standard general name. For further information, see: http://www.who.int/en/

449 "Active" must be understood as a stakeholder, such as an originator or generic company, holding a marketing authorisation with which it sold products in any of the EU Member States in the relevant period under investigation.

(20) The time period considered for the general requests for information was 2000 – 2007. In geographical terms, the information requested related to the whole of the EU, i.e. to each of the 27 Member States.[450]

(21) In order to complete the information needed for the sector inquiry, a number of categories of stakeholders received a further, second request for information (e.g. originator and generic companies). All originator and generic companies that had been subject to surprise inspections also received requests for information relating to the inspection material. Companies were not obliged to provide non-confidential versions for their replies. In order to ensure the adequate protection of confidential information and business secrets, the names of the companies, as well as any information allowing their identification, were removed from this report.

Processing the Information Material

(22) Once collected, the information described above was processed and the results of this are presented in the various chapters of the report.

(23) Regarding stakeholder responses to the requests for information, a significant number of issues arose which required further clarification by the respondent stakeholders.[451] These concerned, for example, matters detected where information received from originator companies did not sufficiently match supposedly equivalent information submitted by generic companies.

(24) It was found during the processing of the information received that the number of responses eventually available for the various questions varied. This was due to the fact, for example, that the information requested was available with certain stakeholders but not with others. In other words, within a category of stakeholder, not every stakeholder may have been concerned by every question (to the same degree). As a consequence, the statistical analyses presented in the figures (e.g. graphs, charts) and tables are not always based on the same number of responses. Accordingly, the sample used in the statistical analysis may not always be the same size. Precise information on sample size is usually given in the graphs and tables or in the adjacent text.

(25) Where results have greater significance on their own, the statistical analysis is based on the sample sizes emerging from the data. However, where inferences are drawn by direct comparison of separate figures and tables, the analysis is based upon comparable sample sizes.

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450 For the years prior to the accession of any of the Member States, information was requested from those Member States that were already members of the EU.

451 Such clarification was requested of stakeholders by means of a procedure previously agreed with stakeholder associations in order to alleviate the burden imposed on stakeholders, e.g. by making provision for regular weekly dispatch of requests for clarification to stakeholders on the same day of the week).

(26) Regarding the absolute sample size, the analysis undertaken in the sector inquiry attempted to use the largest possible number of observations. Where only fairly small sample sizes were available, the results have been checked for statistical robustness/significance.

(27) As mentioned above, the 219 INNs to which certain questions in the requests for information related consist of various subgroups of INNs, which makes the 219 INNs an "artificial" universe. In more technical terms, the universe of the 219 INNs is not random.[452] Therefore, the analyses in the report refer to one or both of the INN subgroups (the T50 list and/or the E75 list) in order to provide the most relevant universes of measurement. However, in order to illustrate the list of 219 INNs and its characteristics, the report may here and there also use all INNs as a universe of measurement.

Methodology Applied to "Impact of Generic Entry"

Data Sources

(28) The analysis made in this section is based on two main sources of data.

(29) First, the analysis used data collected from pharmaceutical companies in the context of the sector inquiry. All data from the companies were gathered for each of the 27 EU Member States, except for price data, where the set of countries in which the companies were requested to provide data was limited to ten: Denmark, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Spain and the United Kingdom.

(30) Second, the Commission has used data requested from IMS Health, a provider of pharmaceutical data services. IMS data were obtained for all 27 Member States. The data obtained from IMS included, for the period 2000-2007 and for each company active in the INN concerned, monthly data on sales (local currency), volumes, prices and discounts (local currency) at the pack level, as well as dates concerning loss of exclusivity ("expiry dates"), launch dates and the level of promotional activity (on a quarterly basis) at the brand level. Most emphasis has been given at sales and prices at the ex-manufacturer level, as they directly relate to the companies being the focus of the sector inquiry.

(31) Progressively, the IMS dataset and the datasets from the companies have been integrated into one dataset [work in progress]. The IMS dataset served as the "central" dataset into which the corresponding data items of the companies were combined (except where company data were not available or in individual cases where these data appeared inaccurate or incomplete).

(32) The two datasets must be seen as complementary. The combined use of the IMS dataset and the company datasets made it possible to use company data to the largest

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[452] The universe of the 219 INNs would have been random if, say, each INN of all possible INNs (population) had had an equal probability of being picked and included.

extent possible, while being able to fill in "gaps" in one dataset with information available in the other dataset.

(33) For instance, in order to keep the informational burden on companies limited, information on prices was asked for 10 Member States only (see above). All analyses of price developments in the other 17 Member States (Austria, Belgium, Bulgaria, the Czech Republic, Cyprus, Estonia, Finland, Ireland, Lithuania, Latvia, Luxemburg, Malta, Portugal, Romania, Slovakia, Slovenia, Sweden) therefore rely on IMS data. Likewise, the calculation of EU averages has involved the use of IMS data for the price component relating to the 17 countries mentioned.

(34) Furthermore, the sample of firms to which the Commission sent questionnaires did not comprise the entire universe of firms active in the production and supply of medicines for human use. The sample contained 43 originator companies and 27 generic companies. Whereas probably the vast majority of originator companies was part of the sector inquiry, this is less likely for the generic companies, mostly those active at a national level. The IMS dataset, by contrasts, aims at covering the entire sector, by tracking the sales of all actors in the field. For that reason, for those companies not part of the inquiry the analysis relied on information provided by the IMS dataset.

(35) On the other hand, some types of data were only available from the companies themselves, not from IMS. For instance, the IMS dataset only contained expiry dates for Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and the United Kingdom: in other words, for most of the EU15 Member States plus the Czech Republic. In addition, IMS expiry dates were sometimes only available for some of the relevant products within the countries, not for all products.

(36) Similarly, information on actual transaction prices and discounts granted by the companies was not available in the IMS dataset, as this is information to which IMS has no access. IMS bases itself mainly on public sources, such as list prices and regulated prices. It then applies a conversion factor to take into account what it understands to be normal discount applicable to that industry level. Prices in the IMS dataset are therefore, normally speaking, not actual transaction prices. In the sector inquiry, by contrast, companies were specifically asked to provide transaction price data.

INNs Considered

(37) For the main part, the analysis in Section B.1.3. was performed on the basis of the "E75" list of INNs for which the Commission requested information from the companies.

(38) The analysis in Chapter B.1.3. at Member State level was conducted each time on the basis of a national subset of the E75 list, namely of those INNs in the E75 list that were relevant for the Member State in question, i.e. on the basis of those INNs that (i) were effectively sold in that Member State and (ii) that faced loss of exclusivity in the period 2000 – 2007.

(39) As a result, based on the IMS dataset, the national subsets of INNs in the various Member States contained the following numbers of INNs.[453]

Table 37: Number of INNs on the E75 list relevant to each Member State

AT	68	**DE**	82	**NL**	25*
BE	75	**EL**	38	**PL**	-
BG	-	**HU**	-	**PT**	35
CZ	15	**IE**	55	**RO**	-
CY	-	**IT**	71	**SK**	-
DK	63	**LV**	-	**SI**	-
EE	-	**LT**	-	**SP**	51
FI	56	**LU**	-	**SE**	71
FR	93	**MT**	-	**UK**	84

Source: IMS data

(40) As is clear from the above table, there are major disparities between the subsets of molecules that were subject to analysis. In part, this is a natural consequence of significant disparities between the national markets for pharmaceutical products in the EU.[454],[455] The differences are explained in part by the fact that the set of INNs sold in each country differs. Further, differences also relate to the period considered. Some INNs had lost exclusivity before the year 2000 in some Member States, but not in others. Other INNs will only lose exclusivity in some Member States after the year 2007. Consequently, the requirements (i) and (ii) mentioned in the previous paragraph resulted in subsets of molecules that were rather different (in size and composition) among the various Member States.[456]

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453 The dashes (-) in the table relate to the fact that, as indicated above under "Data sources", the IMS dataset did not contain expiry dates for these countries. (*) The fact that the number of expiring INNs for the Netherlands is somewhat low is related to the fact that data for the Netherlands are available only as of April 2002.

454 For similar observations, see CRA International, Factors Affecting Generic Entry in Europe, June 2008. CRA observes that of the 271 molecules that lost protection in the period 2000-2007 in one of the five largest national markets for pharmaceutical consumption in the EU (namely France, Germany, Italy, Spain, and United Kingdom) only 30 of them lost protection (in the same time frame, 2000-2007) in all five countries.

455 A factor that may also have contributed to the disparities may be that, as set out above under "Data sources", IMS expiry dates were sometimes only available for some of the relevant products within the countries, not for all products.

456 Focusing on products with the majority of their sales in the retail segment, CRA (2008) reports that the total number of products losing exclusivity in the period 2000-2007 was 105 in the UK, 143 in France, 114 in Germany, 106 in Spain and 141 in Italy. In each of these countries, the top 50 of the products losing exclusivity in the period 2000-2007 (in terms of value) accounted for over 85-90% of sales of all products losing exclusivity. CRA International, Factors Affecting Generic Entry in Europe, June 2008 (p. 23-24).

(41) The dataset with company information allowed increasing, to a mild extent, the number of INNs that could be used for the analysis in most countries. The merged dataset led to national subsets of INNs in the various Member States with the following numbers of INNs:

Table 38: Number of INNs on the E75 list relevant to each Member State

AT	74	**DE**	77	**NL**	65
BE	76	**EL**	44	**PL**	7
BG	14	**HU**	22	**PT**	44
CZ	17	**IE**	60	**RO**	16
CY	-	**IT**	77	**SK**	6
DK	67	**LV**	7	**SI**	7
EE	1	**LT**	4	**SP**	63
FI	57	**LU**	45	**SE**	80
FR	91	**MT**	-	**UK**	87

Source: Pharmaceutical Sector Inquiry (partially based on IMS data)

(42) Also with company information included, few observations (INNs) appeared to be available for study in Slovakia (6), Slovenia (7), Poland (7), Latvia (7), Lithuania (4), Estonia (1), Cyprus (-) and Malta (-). A contributing factor to the relatively low number of observations may be that few INNs may have effectively faced loss of exclusivity in the relevant period 2000 – 2007 in the countries concerned. However, a substantial number of companies also appeared unable to provide comprehensive information on the patent expiry date in these countries (many entries contained "N/A"). Further, the merge process of the company data with the IMS data turned out – from a technical matching perspective – less successful than for the other Member States. For this reason, section B.1.3. does not, at present, contain descriptive statistics for these countries. The data received are undergoing further analysis.

(43) The number of available observations (INNs) for Romania and Bulgaria, who became Member States in 2007, is also small. Further, there appear to be a substantial number of data issues in the information provided for these countries. For this reason, section B.1.3. does not contain descriptive statistics for these two countries.

Measures Analysed

(44) All EU statistics (entry rates, market shares, price indices, etc.) in the section are calculated taking into account the relative importance of the individual Member States as measured by the sales of the relevant INNs in the Member State concerned, either in the year prior to expiry (for establishing shares of generic entry, average time to entry and generic penetration) or in the year 2007 (for the indices that track the development of prices or volumes over longer time periods).

(45) The rate used for the conversion of exchange rates is the average exchange rate in the year 2007.

(46) Descriptive statistics on the impact of generic entry are mostly presented both as a "head count" measure (where within each country each INN in counted as equal) and as a weighted measure (where within each country each INN receives a weight to

account for its relative importance). Two types of weights are used for the latter purpose, depending on the context. For the purposes of establishing shares of generic entry, average time to entry and generic penetration, weights are used in relation to the sales value of each INN in the year before loss of exclusivity. By contrast, for the indices that track the development of prices over longer time periods, weights are used in relation to the value share of each INN sold in the month concerned (contemporary weights). In this way, indices are obtained that are close in spirit to a CPI (Consumer Price Index) for the basket of INNs considered. In addition, the use of contemporary weights (as opposed to constant weights, e.g. related to a fixed year) avoids problems one might encounter in relation to months where a given product is in fact non-available. The same approach is used for tracking volume indices over time.

(47) When descriptive statistics were given by size class, the following approach was used. First, the 128 INNs on the E75 list were divided into ten classes, with class one referring to the 10% of lowest-selling INNs in terms of EU sales value in 2007, class two to the next lowest 10%, etc. Class ten thus refers to the 10% of highest-selling INNs on the E75 list. Then, for each INN, the relevant statistic in each country was obtained and weighted using country weights. Finally, within each size class, the weighted average was taken over all INNs in that class.

(48) The measurement of time to entry was somewhat complicated by the fact that in the IMS dataset there was a (relatively small) number of instances, where generic entrants appeared to have entered before the loss of exclusivity of the INN in the country concerned. For those INNs for which the entry date appeared to be just preceding the loss of exclusivity, the small time gap is probably just related to a small measurement error. Those INNs with a longer time gap are more difficult to interpret. These instances may relate to INNs for which the company or product status may not have been fully established or recorded in the IMS dataset,[457] but also to some possible "early" entries by generic firms, i.e. entries before the date of loss of exclusivity. Also these instances have been regarded as entry at the date of loss of exclusivity, pending confirmation on the exact nature of these instances.

(49) For the average price indices, the index level is set to 1 (i.e. unity) six months prior to the end of the exclusivity period. The benchmark was taken 6 months prior to the end of the exclusivity period instead of at the very moment exclusivity ended in order not to let incidental price cuts or small errors in the date of expiry influence the benchmark price level.

(50) The same approach is used for the volume indices.

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457 The IMS reference information on company and product status refers to the situation in the spring of 2008, when the database was created. Hypothesis: certain companies entered on a licence when the product was still on-patent, and were thus recorded as making sales as of that time. However, after the loss of exclusivity, a licence is no longer necessary and the company continues to produce what has then become a generic product. This might be a possible explanation for certain companies selling “generic” products (according to the product status) before loss of exclusivity.

List of 219 INNs

ACARBOSE	ADALIMUMAB	ADRAFINIL
ALENDRONIC ACID	ALFUZOSIN	AMISULPRIDE
AMITRIPTYLINE	AMLODIPINE	AMOROLFINE
AMOXICILLIN + CLAVULANIC ACID	AMOXICILLIN + LANSOPRAZOLE + CLARITHROMYCIN	ANASTROZOLE
ATENOLOL	ATORVASTATIN	AZITHROMYCIN
BALSALAZIDE	BECLOMETASONE	BENAZEPRIL
BISOPROLOL	BRIMONIDINE	BRIVUDINE
BUDESONIDE	BUDESONIDE + FORMOTEROL	BUFLOMEDIL
BUPRENORPHINE	BUSERELIN	CABERGOLINE
CALCIPOTRIOL	CALCIPOTRIOL + BETAMETHASONE	CANDESARTAN CILEXETIL
CAPSAICIN	CARTEOLOL	CARVEDILOL
CEFATRIZINE	CEFIXIME	CEFPODOXIME PROXETIL
CEFTIBUTEN	CEFTRIAXONE	CEFUROXIME AXETIL
CELECOXIB	CELIPROLOL	CETIRIZINE
CICLETANINE	CICLOSPORIN	CIPROFIBRATE
CIPROFLOXACIN	CISAPRIDE	CITALOPRAM
CLARITHROMYCIN	CLODRONIC ACID	CLOPIDOGREL
CROMOGLICIC ACID + REPROTEROL	DALTEPARIN SODIUM	DARBEPOETIN ALFA
DIACEREIN	DICLOFENAC	DOMPERIDONE
DONEPEZIL	DOXAZOSIN	EBASTINE
ENALAPRIL	ENOXAPARIN SODIUM	EPOETIN ALFA
EPOETIN BETA	ESOMEPRAZOLE	ESTRADIOL
ESTRADIOL + NORETHISTERONE	ETANERCEPT	ETHINYLESTRADIOL + CYPROTERONE
ETHINYLESTRADIOL + DESOGESTREL	ETHINYLESTRADIOL + DIENOGEST	ETHINYLESTRADIOL + GESTODENE
ETHINYLESTRADIOL + NORGESTIMATE	ETIDRONIC ACID	ETODOLAC
EZETIMIBE	FELODIPINE	FENOFIBRATE
FENTANYL	FEXOFENADINE	FINASTERIDE
FLECAINIDE	FLUCONAZOLE	FLUOXETINE
FLUPIRTINE	FLUTICASONE	FORMOTEROL
FOSFOMYCIN TROMETAMOL	FOSINOPRIL	GABAPENTIN
GALANTAMINE	GLATIRAMER ACETATE	GLIMEPIRIDE
GOSERELIN	HYDROCHLOROTHIAZIDE + BENAZEPRIL	HYDROCHLOROTHIAZIDE + BISOPROLOL
HYDROCHLOROTHIAZIDE + CANDESARTAN CILEXETIL	HYDROCHLOROTHIAZIDE + CAPTOPRIL	HYDROCHLOROTHIAZIDE + ENALAPRIL
HYDROCHLOROTHIAZIDE + IRBESARTAN	HYDROCHLOROTHIAZIDE + LISINOPRIL	HYDROCHLOROTHIAZIDE + LOSARTAN
HYDROCHLOROTHIAZIDE + QUINAPRIL	HYDROCHLOROTHIAZIDE + RAMIPRIL	HYDROCHLOROTHIAZIDE + VALSARTAN
HYDROMORPHONE	IBANDRONIC ACID	ILOPROST
IMATINIB	INFLIXIMAB	INSULIN ASPART
INSULIN GLARGINE	INSULIN HUMAN BASE	INSULIN HUMAN BASE + INSULIN HUMAN ISOPHANE

INSULIN HUMAN ISOPHANE	INTERFERON BETA-1A	INTERFERON BETA-1B
IPRATROPIUM BROMIDE + SALBUTAMOL	IRBESARTAN	ISOTRETINOIN
ITRACONAZOLE	LACIDIPINE	LAMOTRIGINE
LANSOPRAZOLE	LETROZOLE	LEUPRORELIN
LISINOPRIL	LORATADINE	LOSARTAN
LOVASTATIN	MELOXICAM	METHYLPHENIDATE
METOCLOPRAMIDE + ACETYLSALICYLIC ACID	METOPROLOL	METRONIDAZOLE
MIRTAZAPINE	MODAFINIL	MOMETASONE
MONTELUKAST	MOXIFLOXACIN	MOXONIDINE
NADOXOLOL	NADROPARIN CALCIUM	NEDOCROMIL
NICARDIPINE	NICORANDIL	NIFEDIPINE
NIZATIDINE	NOMEGESTROL	NORFLOXACIN
OCTREOTIDE	OFLOXACIN	OLANZAPINE
OMEPRAZOLE	ONDANSETRON	OXALIPLATIN
PACLITAXEL	PANTOPRAZOLE	PAROXETINE
PEGFILGRASTIM	PERGOLIDE	PERINDOPRIL
PERINDOPRIL + INDAPAMIDE	PIOGLITAZONE	PIROXICAM BETADEX
PRAMIPEXOLE	PRAVASTATIN	PRAVASTATIN + ACETYLSALICYLIC ACID
PREGABALIN	QUETIAPINE	QUINAPRIL
RABEPRAZOLE	RAMIPRIL	RANITIDINE
RIBAVIRIN	RILMENIDINE	RISEDRONIC ACID
RISPERIDONE	ROFECOXIB	ROSIGLITAZONE
ROSUVASTATIN	ROXITHROMYCIN	SALBUTAMOL
SALMETEROL	SALMETEROL + FLUTICASONE	SERTRALINE
SILDENAFIL	SIMVASTATIN	SIMVASTATIN + EZETIMIBE
SOMATROPIN	SUMATRIPTAN	TAMSULOSIN
TELMISARTAN	TERBINAFINE	TESTOSTERONE
TIAGABINE	TIBOLONE	TILIDINE + NALOXONE
TINZAPARIN	TIOTROPIUM BROMIDE	TIZANIDINE
TORASEMIDE	TRAMADOL	TRAMADOL + PARACETAMOL
TRAZODONE	TRIPTORELIN	VACCINE, HEPATITIS B
VACCINE, HEPATITIS B + VACCINE, ACEL.PERT.DIP.TET. POLIO & HIB	VACCINE, HEPATITIS B + VACCINE, DIP.TET.PERT.POLIO & HIB.	VACCINE, INFLUENZA
VACCINE, PNEUMOCOCCAL	VACCINE, PNEUMOCOCCAL CONJUGATE	VACCINE, TICK BORNE ENCEPHALITIS
VALACICLOVIR	VALPROATE SEMISODIUM	VALSARTAN
VENLAFAXINE	VIGABATRIN	ZOLPIDEM

Source: Pharmaceutical Sector Inquiry (selection based on IMS data)

Annexes to Chapter B

Annex to Chapter B.1.2: Further Product Life Cycle Management Strategies during Patent protection

Pricing

(51) As patent expiry approaches, originator companies must consider their future pricing strategies, which will depend on product-specific price sensitivity (relating to Member State-specific demand-side characteristics). One strategy is simply to maintain the price following loss of exclusivity. The rationale behind such a strategy is the expectation that a significant share of market demand is inelastic. Possible reasons for the lack of price sensitivity are manifold but could include the deployment of measures aimed at achieving product loyalty.

(52) The more common strategy is to initiate price competition with incoming generic companies. Price decreases can be implemented through cutting the list price or through selective price reductions or rebates for wholesalers, pharmacies or insurers. A large originator company might also attempt to use its economies of scale in order to drive small generic companies out of business. This strategy of price reductions in anticipation of generic entry was described by one company as being a means of creating an "unattractive generic market".

Launch of an Own Generic

(53) Originator companies might decide to launch a "generic version" of their own products as patent expiry approaches. Similarly they may decide to license the product to a third party. Most respondent originator companies stressed that the option of launching their own or an in-licensed generic product is only considered once generic competitors have entered the market or at least when generic competition has received approval. Several companies also stressed that "the presence of a high number of independent generics on the market may have a major role in deciding whether to launch a generic product". Despite the existence of conditions encouraging originator companies to launch a generic version of their original product, respondent companies emphasised the fact that they review the option of launching or licensing generic versions of their products on a product-by-product and market-by-market basis.

(54) Originator companies are divided over the question of whether to launch their own or in-licensed generics. Approximately 45% of originator companies indicated that between 2000 and 2007 they launched or seriously considered launching their own or an in-licensed generic. Companies not adopting the strategy of selling generic medicines (directly or indirectly) discarded this option due to inconsistencies with the focus on innovation of their overall business model.

Switch to OTC

(55) Towards the end of the life cycle of an originator product, switching the medicine to an over-the-counter (OTC) pharmaceutical product which does not require a prescription by doctors may be considered.[458] Switching to OTC is sometimes considered by companies, but it is apparently not frequently used.

(56) One reason that this strategy is seldom used could be that a pre-condition for such a switch to OTC products is that it must be authorised by a marketing authorisation agency upon request of the originator company. For a switch to OTC of prescription medicines to be authorised, there has to be proof that the therapeutic area it addresses allows self-diagnosis and monitoring by the patient. Therefore, the dosing regime and instructions should be understandable for patients and no exposure to significant risks should result from the product.

(57) If these requirements are met, the attractiveness of a switch to OTC products lies primarily in the marketing opportunities that ensue. This further requires an increased marketing budget and an effective consumer healthcare division. Otherwise, the OTC medicine must be licensed to another company.

(58) Contrary to prescription medicines, direct advertising of OTC medicines to the consumer is allowed. In general, OTC medicines do not compete with generic products, which makes the timing of the switch less crucial than for other life cycle management strategies. Nevertheless, a switch to OTC products late in the life cycle and before patent expiry is generally preferable because at this point it becomes an option to strengthen the product image and brand loyalty of the patient. Moreover, the switch to OTC products can extend the data protection period.[459]

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458 To be more precise, the switch tends to be to behind-the-counter (BTC) products that do not require a prescription but can only be sold through pharmacies.

459 Article 74(a) of Directive 2001/83/EC of 28.11.2004 on the Community code relating to medicinal products for human use as amended by Directive 2004/27/EC of the European Council and the Parliament of 31 March 2004 (OJ L311/67 p.67).

Annex: Claim types

Overview of Claim Types Found in Pharmaceutical Patents

(59) Fundamentally, two types of patent claim exist under EPC: a product claim and a process claim. A product claim relates to the characteristics of a physical entity (e.g. composition), while a process claim relates to the production process. However, medicines are never simply produced for market consumption as the pure active agent. Rather, they are sold in different physical forms, such as tablets or solutions for injection, and are also supplied at different dosage strengths. The same pharmaceutically active substance may furthermore be suitable for a number of therapeutic uses.[460]

(60) Patents in the pharmaceutical sector are therefore often referred to in terms of the type of products or processes that they claim. The following is a brief outline of the main 'types' of claims that are commonly found in pharmaceutical patents. Providing they meet the three requirements for patentability (novelty, inventive step and industrial applicability), all of them can be patented.

Compound, Basic, NCE/NME or API patent

(61) These terms cover patent claims for new molecules which have a therapeutic use. The molecules have never been disclosed previously and are therefore new in their own right.

(62) An expression which has been coined for patents for such products is the term "primary patent", the implication being that this is the first ever patent covering a particular pharmaceutically active agent. All other patents that build on these primary patents, by applying the active agent in a new way, are termed "secondary patents". The following descriptions are of claims which could be found in these secondary patents. It should be noted, however, that many of the following claims can also be found in primary patents.

[460] For example, the pharmaceutically active agent sildenafil was first used as an anti-hypertensive drug and later as a treatment for impotence (Viagra®).

Intermediates

(63) Intermediates are molecules which, in themselves, are not pharmaceutically active but can be used in further chemical processes to manufacture a pharmaceutically active agent. Claims for intermediates can form a central part of a company's protection strategy when applying for intellectual property rights because they might stop competitors from manufacturing the pharmaceutically active agent.

Salt forms

(64) Many molecules can exist in one or more salt forms. Salts are formed from the chemical reaction between an acid and a base. The selection of the correct salt can be crucial to the success of a product because one salt form can have superior or advantageous properties over another. For example, one salt form may have a much better chance of being absorbed into the body than another. Alternatively, a particular salt form may be much more stable, allowing manufacturers to prepare or store formulations of the drug more economically.

Polymorphic Forms (polymorphs)

(65) Many molecules can exist in different crystalline forms, that is to say, the shape of the crystals they form is different. Such molecules are said to be polymorphic. Examples exist where different polymorphic forms of a pharmaceutically active agent possess advantageously different properties.[461]

Solvates and Hydrates

(66) A pharmaceutically active agent can exist in different solvated forms. This means that when crystalline, each active molecule is associated with one or more solvent molecules – they effectively represent a mixture of solvent and active agent.[462] When the solvent is water, the solvates are termed hydrates. Solvates of pharmaceutically-active agents can also possess advantageous properties.

Metabolites

(67) When substances are administered to a mammal, enzymes in the body can modify them chemically to produce new molecules known as metabolites. This is part of the natural metabolic processes of the body. In some cases, it has been discovered that a putative pharmaceutically active agent does not have any therapeutic effect in the body, but only has such effects after it has been metabolised. It is hence the metabolite which possesses the pharmaceutical activity. In some cases it is therefore desirable to obtain protection for metabolites.

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461 A high-profile example of this was GSK's "Form II Ranitidine" (Zantac®), a different crystalline form of the molecule ranitidine for which a patent was obtained after the expiry of the patent for the Form I polymorph.

462 The presence of solvent molecules results from the chemical processes used to make the pharmaceutically active agent

Pro-drugs

(68) Pro-drugs are inactive molecules formed by chemical modification of a pharmaceutically active agent. When administered to mammals, however, metabolic processes in the body remove the chemical modification to reveal the active agent. Pro-drugs are often made when the active agent has little or no ability to find its way into the blood stream when administered via a normal route, e.g. orally. The modification to form the pro-drug is aimed at producing a molecule which can find its way into blood plasma, where it is subsequently metabolised to release the pharmaceutically active agent.

Drug combinations

(69) Combinations of two or more pharmaceutically active agents can often give rise to surprising or unexpected effects. For example, two drugs, when combined, may have a synergistic effect.

Formulations

(70) Formulations – sometimes referred to as gelanical forms or galenics – relate to pharmaceutical preparations of a pharmaceutically active agent. They may, for example, take the form of a tablet, an oral suspension or a solution for injection. Formulations comprise more than just the active ingredient, and typically contain other compounds, often referred to as pharmaceutical excipients. These excipients can have a profound effect on the behaviour of the active agent, often assisting in its delivery to the body. Protection for these products is therefore also of great concern to pharmaceutical companies since it is usually the formulations themselves which are marketed.

Particle Sizes

(71) When pharmaceutically active agents are formulated for administration, they are very often manufactured as particles of active agent before being formed into tablets or other solid forms. These particles can have different sizes. Sometimes, the particle size and/or shape can give rise to advantageous properties, for example when a particular particle size can prove to be much more suitable for the tabletting process.

Devices

(72) The term 'devices' extends to products aimed at delivering a pharmaceutically active agent. Common examples might be a dry powder inhaler containing an anti-asthmatic or a transdermal patch comprising a cardiovascular agent. Device claims can also be of great commercial importance if a company finds a new and improved method of administering a medicine.

Dosage Regimes[463]

(73) The amount and frequency with which a medicine is administered, often referred to as the dosage regime, can sometimes alter the characteristics of the medicine or treatment and thus give rise to an advantageous effect. For example, a specific dosage regime can produce a reduction in side-effects while maintaining therapeutic efficacy of the medicine.

Process claims

(74) Process claims in the pharmaceutical area are typically concerned with methods for the preparation of a pharmaceutically active agent or intermediates. Their protection via one or more patents can be of significant commercial importance to both originator and generics companies if industrial-scale processes can be found which are substantially more economical than others.

Medical Use Claims[464]

(75) The exclusion in the European Patent Convention (EPC) of the patentability of methods for the treatment of the human or animal body by surgery or therapy provided a stumbling block to obtaining a patent for a new medical use for a known substance. Under the EPC, where products are defined as being for use as a medicament (a so-called 'first medical use claim'), the restriction 'for use as a medicament' is considered to render the product novel if that product has not been used previously in medicine.

(76) Similarly, a process for the production of a medicament for a specific medical use (a so-called 'second or further medical use claim') was also considered to be novel if the medicament had never been used for the claimed therapeutic indication. This was essentially a process claim and is often referred to as a 'Swiss-type claim'. However, under the revised EPC 2000, product claims which are restricted to a specific medical use are now also considered novel over other medical use claims for the same product but for different therapeutic indications. Thus, if a company finds a new medical use for a known medicament, a patent for that new use may be obtained. This is sometimes termed the 'use-limited product protection for second and further medical uses'.

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463 The question of patentability of dosage regimes at the EPO is currently before the Enlarged Board of Appeal.

464 The question of whether there is a difference between Swiss-type claims and use-limited product claims at the EPO is currently before the Enlarged Board of Appeal.

Annex to Chapter C.2.4.

Overview of the USA Regulatory Environment on Patent Settlement Agreements

The Hatch Waxman Act: specific process for the approval of generic products

(1) In the USA, innovative pharmaceutical products must primarily be approved by the Food and Drug Administration (FDA) under the Federal Food, Drug, and Cosmetic Act, via the "New Drug Application" (NDA) process.[465] This process, which necessitates the demonstration of product safety and effectiveness by means of adequate investigations, may be long and risky for a company. The innovator must submit certain patent information to the FDA when filing an NDA. This information is published in the so-called "Orange Book".[466]

(2) Since 1984 and the enactment of the "Hatch-Waxman Act"[467] (which was later amended in 2003[468]) alternative ways of achieving FDA approval for a generic product may be employed. The Act provides a streamlined process for submitting an "Abbreviated New Drug Application" (ANDA) to the FDA in order to obtain approval for a product that is shown to be a generic copy of a previously approved innovator medicine[469]. The Hatch-Waxman Act makes the approval of ANDAs dependent on the status of patents for the originator medicine.

(3) If a generic company wishes to market a generic product prior to the expiry of a patent, it must submit a so-called Paragraph IV certification, which is recognised as an act of infringement. Following notification by the generic company, the patent holder (the NDA holder) may file a suit within 45 days. In such a case, the generic company may receive approval for ANDA only after 30 months, upon expiry of the patent, or upon a favourable decision of the court. If the court decides that the patent is valid and has been infringed, the approval of the ANDA cannot be effective until the patent expires.[470]

(4) In order to challenge pharmaceutical patents, the Hatch-Waxman Act provides prospective generic companies with an additional incentive: the grant of a 180-day exclusivity period. Exclusivity may be granted to the first ANDA applicant to file a

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465 See 21 U.S.C. § 301.

466 See 21 U.S.C. § 355(b)(1), (c)(2).

467 Codified as amended at 21 U.S.C. § 355 and 35 U.S.C. §§ 156 and 271 (d)-(h).

468 Amended as part of the Medicare Prescription Drug, Improvement, and Modernisation Act of 2003.

469 See 21 U.S.C. § 355(b)(2).

470 See 21 U.S.C.§ 355.

paragraph IV certification. The FDA cannot issue marketing approval to a subsequent ANDA with the certification on the same product until the 180-day exclusivity period has been ended or forfeited. It is expected that the first ANDA applicant can obtain better profits than subsequent entrants.[471]

(5) Commentators have considered that the processes implemented through the Hatch-Waxman Act give specific incentives to generic companies to challenge originator companies' patents with less risk. This incentive might well influence the dynamics of litigation.

[471] See 21 U.S.C § 355(j)(5)(B)(iv).