

Liberalisation and (de)Regulation of Slovenian Telecommunications Markets (*)

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The telecommunications industry is the key industry of the future and, not surprisingly, governments, researchers and investors alike are paying it significant attention. In recent decades the telecommunications industry has been characterised by changes in every aspect of the sector. These changes have already transformed the way people work and live, and will also influence people's lives in the future (BLONSKI, 2002, pp. 1-2). Changes seen in the telecommunications industry include technology advances, as well as changes to market structure. As for technology changes, we should stress the importance of digitalisation, which has led to the launch of new products and convergence between information technologies and telecommunications. On the other hand, the monopoly structure involving one telephone company has been transformed into a structure of different, competing companies. All of these changes have been accompanied by legislative and regulatory developments and the expansion of independent national regulatory agencies (CAVE *et al.*, 2002, p.3).

Slovenia has embarked on the path to liberalising the telecommunications market, including the gradual introduction of related new legislation. In Slovenia the liberalisation of telecommunications started relatively late compared to other EU countries. The monopoly over fixed voice telephony was formally abolished at the beginning of 2001. Furthermore, an independent regulator (ATRP¹) was established in the second half of 2001. This paper consequently aims to analyse the (de)regulation and liberalisation of telecommunications in Slovenia and its

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¹ Telecommunications, Broadcasting and Post Agency.

current success or failure en route towards liberalised telecommunications markets. We find that, despite its highly developed telecommunications services, Slovenia is still lagging behind for various reasons in implementing measures to bring about fully liberalised telecommunications markets.

The paper is structured as follows: in the first part we present the current market structure of fixed and mobile markets and their development. The second part of the paper benchmarks the Slovenian telecommunications market with markets of selected countries, then analyses the country's regulatory institutional structure and addresses the effectiveness of regulation. Finally, we evaluate the effects of deregulation and propose some policy guidelines aimed at the further liberalisation of telecommunications in Slovenia.

■ Development of the Slovenian telecommunications market ²

In 2002 the Slovenian telecommunications market was worth EUR 615 million in terms of revenues, which represented 2.6% of the country's GDP. The market had grown by about 8% compared to 2001 and was mainly driven by the mobile segment (4th Report, 2003, p.117). The Slovenian market represents only some 2% of the total telecommunications market in (recent and current) EU candidate countries (EUCCs ³). Revenues in the telecommunications market in EUCCs grew by around 20% from approximately EUR 25 billion in 2001 to about EUR 30 billion in 2002. This growth was also mainly driven by the mobile sector. On the other hand, revenues in the electronic communications market rose from EUR 231 billion in 2001 to EUR 242 billion in 2002 in the EU, representing 4.8% growth ⁴ (4th Report, 2003, p.12 and 9th Report, 2003, p.8).

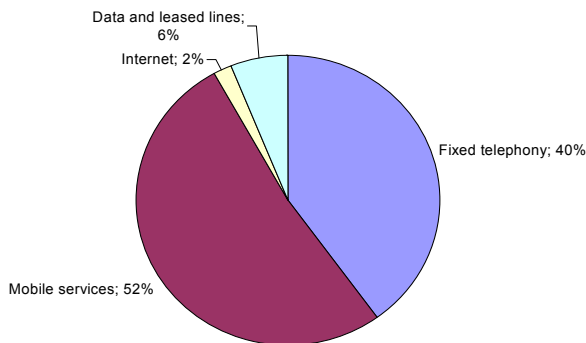
² The data presented in the paper refer to June 30th 2003 for EUCCs (4th Report) and to August 2003 for EU countries (9th Report) unless otherwise stated.

³ The following countries are included in EUCCs: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Turkey. Even though some of the listed countries are now already members of the EU, we will use the term EUCC for all these countries because our paper relates to data stemming from before the EU's latest enlargement.

⁴ The estimated growth rate for the EU's electronic telecommunications market in 2003 was between 3.7 and 4.7%.

In figure 1, we present the shares of telecommunications market segments in Slovenia. In terms of revenues, mobile telephony is dominant and takes a 52% market share. In EUCCs it is also evident that in most countries the mobile segment has prevailed over the fixed segment and on average has a 47% share (4th Report, 2003, p.14). In the EU the share of the fixed telephony segment is larger than that of mobile telephony. The reason for the mobile market prevailing over the fixed market in EUCCs is the underdevelopment of the fixed telephony market compared to the EU. On the other hand, the market share of data services and leased lines is very small in EUCCs and below the EU average. However, the observed market shares for data services and leased lines from 1999 to 2001 for the EUCC-10⁵ show a growth trend (2nd Report, 2002, p.12).

Figure 1: Share of telecommunications market segments in Slovenia in 2002 by revenues



Source: ATRP, 2004, p.9.

Fixed telephony

The Slovenian telecommunications market was liberalised at the beginning of 2001. By the end of 2003 three licences for fixed public voice telephony operations had been granted. Nevertheless, only Telekom Slovenije⁶, the incumbent operator, was operational in 2003⁷. Telekom

⁵ EUCC-10 are the EUCCs excluding Cyprus, Malta and Turkey.

⁶ 67% of Telekom Slovenije is owned by the state (62.53% directly by the Republic of Slovenia and 4.25% by the state-owned National Property Fund) (4th Report, 2003, p.117). Telekom

Slovenije only faces competition from the providers of voice telephony over IP protocol (VoIP) and the operators of international transfer networks, which provide international calls (ATRP, 2004, p.10).⁸ Until May 11th 2003, Telekom Slovenije was also obliged by law (*Telecommunications Act*) to provide universal services without compensation by meeting quality requirements in accordance with the ETSI EG 201 769-1 document. This obligation was also extended for the period after May 2003 according to an ATRP decision (ATRP, 2004, p. 20 and ATRP 2003, p. 6).⁹

Table 1 shows there was an obvious decrease in PSTN lines between the end of 1998 and the end of 2003. However, this fall was compensated for by an increase in ISDN lines and Centrex. Therefore, the total number of fixed lines has increased in recent years. The penetration of fixed telephony, measured in fixed lines per 100 households, increased by 5.1 percentage points last year and reached 96.2% in June 2003 (4th Report, 2003, p.16).

Table 4: Number of fixed lines of Telekom Slovenije 1996-2003 (in thousands)

	<i>PSTN</i>	<i>ISDN</i> ⁽¹⁾ (<i>BA+PA</i>)	<i>Centrex</i>	<i>Total</i>
31.12.1996	615	7		622
31.12.1997	663	23		686
31.12.1998	726	46		772
31.12.1999	704	82	21	807
31.12.2000	664	132	66	862
31.12.2001	642	180	70	892
31.12.2002	580	232	111	923
31.12.2003	563	276	130	969

⁽¹⁾ Number of channels.

Source: STERGAR, 2004

Slovenije is a 100% owner of Mobitel (mobile operator) and 100% owner of SiOL (the largest Internet operator). In 2002 the revenues of Telekom Slovenije Group represented over 90% of total revenues generated by the Slovenian telecommunications industry.

⁷ Two licences were also issued to two domestic firms, which announced the start of operations in 2004.

⁸ In the ATRP register there were 22 operators providing voice telephony services over IP protocol and 11 operators of international transfer networks at the end of 2003.

⁹ Telekom Slovenije had to provide universal service without compensation. By law, the operator of a fixed telephone network that holds a market share of over eighty percent in terms of total revenues in the country is obliged to provide universal services without a right to a subsidy.

In 2001 Slovenia completed the 100% digitalisation of the fixed network, enabling value added services and increasing quality of service for customers. An important indicator showing the development of the fixed network is the presence of xDSL (ADSL) lines. In 2002 Slovenia had 0.84 ADSL lines per 100 inhabitants. Based on an analysis of the ADSL market in the EU in 2002, the ATRP concluded that Slovenia remains far below the EU average (ATRP, 2003, p. 7). However, from January to December 2003 the number of ADSL lines grew by 129% and reached 38,330. The ADSL market in Slovenia is very concentrated since SiOL (a subsidiary of Telekom Slovenije) holds a 99% market share.¹⁰ A comparison of 1Mbit/s prices for residential users also shows that the prices in Slovenia are 4 times lower than the average EU price (ATRP, 2004, pp. 15-17). In the market for broadband internet access, SiOL faces competition from cable operators. However, when all technologies for broadband access are taken into account SiOL still has a large market share of 66%.

Mobile telephony

In Slovenia there are four companies in the mobile telephony market. There are three operators (Mobitel, Si.mobil and Western Wireless International¹¹) and one service provider, Debitel, which uses Mobitel's network. Mobile telephony development began in Slovenia in 1991, when the company Mobitel started building a network using analogue technology. The NMT system was chosen.¹² As seen in figure 2, mobile telephony in Slovenia took off relatively late compared to the rest of the world.

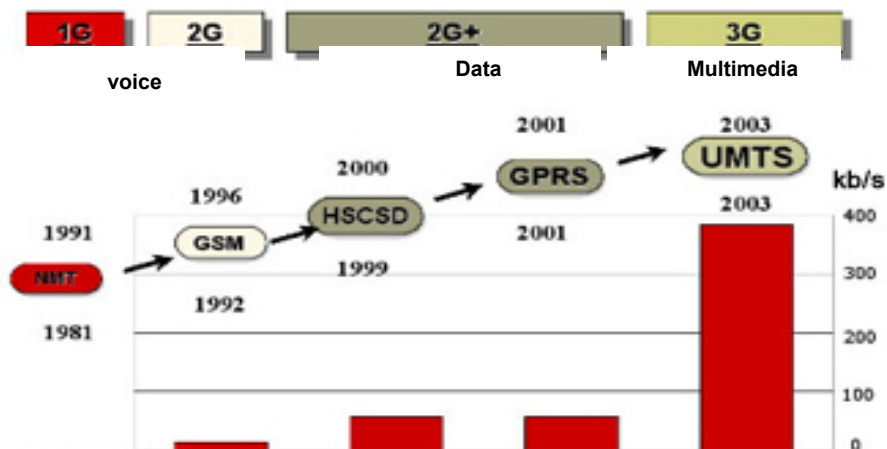
Similarly, Slovenia lagged four years behind other countries in introducing the second generation of mobile telephony. In spite of this, in December 2003 the third generation of mobile telephony was among the first in the world to be launched, after being introduced by Mobitel. Slovenia's high penetration rate, which is 2 percentage points above the EU average and reached 83% in mid-2003, also points to the rapid development of the mobile telephony market in Slovenia (4th Report, 2003, p. 46).

¹⁰ In December 2003 SiOL also had a 44% market share of the dial-up internet market (ATRP, 2004, pp. 13-14).

¹¹ Western Wireless International is known under the brand name Vega.

¹² The network was built in co-operation with neighbouring Croatia. In contrast to other countries, the NMT system in Slovenia uses the frequency 410 MHz, therefore roaming is only possible in Croatia, where the same system is used. Mobitel's analogue system is still in use.

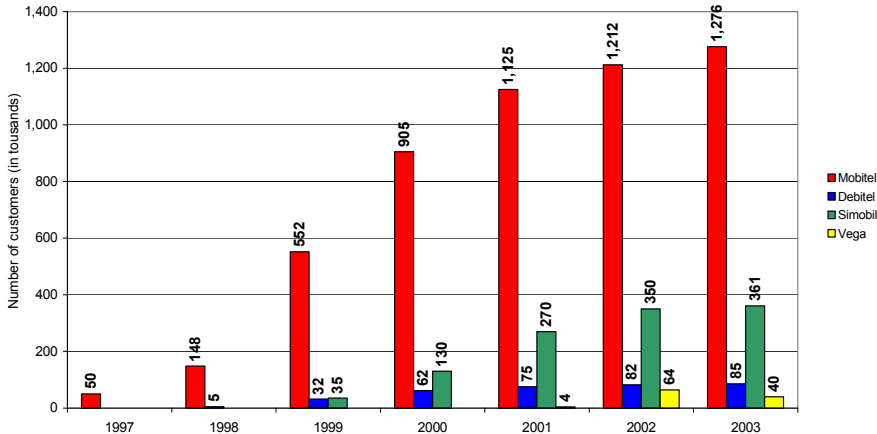
Figure 2: Technological development of mobile telephony in Slovenia and worldwide



Note: The years shown below the headings refer to the development of mobile telecommunications in the world, while the years shown above them refer to the development of mobile telecommunications in Slovenia. The data regarding data transmission speed refer to Slovenia.

Source: <http://www.mobitel.si/>

New companies have entered the Slovenian mobile market gradually. As in most other countries, it was decided that only one company should operate the analogue mobile telecommunications network. As mentioned, since 1991 the provider of the first generation of mobile telecommunications was Mobitel. The number of analogue users grew until 1998, when it reached 43,000 users. In subsequent years, the number of analogue users has been falling slightly and stabilised at 40,000. The main reasons for this halt in the growth of analogue users were the introduction of the second generation of mobile telecommunications in 1996. The first licence for GSM was again granted to Mobitel. The growth in GSM users is presented in Figure 3. By the end of 1997 the number of GSM users already exceeded the number of analogue users. In November 1998 the company Debitel started providing mobile services. Since Debitel is only a provider of services and uses Mobitel's network, its entry to the market did not bring about any relevant changes.

Figure 3: Number of GSM users by companies in Slovenia

Note: Data refer to 31.12.2003. Data for Vega for 2003 are estimated.

Source: STERGAR, 2004.

In March 1999 the second GSM operator Si.mobil started to provide mobile services¹³. With the entry of this second operator, competition was actually created in the Slovenian market. In Figure 4 we see that Mobitel reduced its prices in the middle of 1998. We assume this was already part of preparations for the new operator's entry and that building up a solid subscriber base was very important for the company. At the end of 1998 Mobitel also introduced pre-paid packages¹⁴. The entry of Si.mobil triggered further price cuts. Falling prices, subsidised handsets and the introduction of pre-paid packages led to an increase in mobile users from 150,000 in 1998 to over one million by the end of 2000 (figure 3). The further launch of new services was also motivated by competition. In December 2001 the third operator, Vega, entered the market¹⁵, which in spite of its low on-net call prices and large scale promotion, did not manage to win a significant market share¹⁶. At that time, penetration was also relatively high at 69%. However, many existing users had signed long-term contracts with other operators in order to get subsidised handsets.

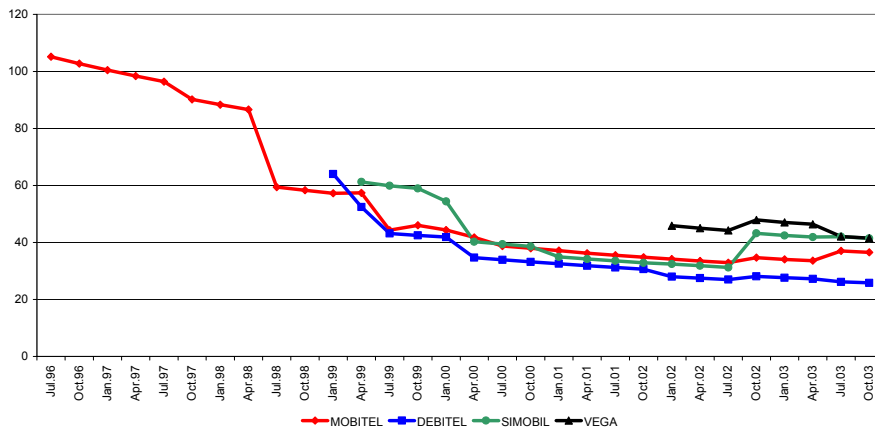
¹³ The biggest shareholder in Si.mobil since 2001 is the company Mobilkom (Austria). In 2003 Si.mobil signed a partnership agreement with Vodafone.

¹⁴ Si.mobil introduced pre-paid packages one year later.

¹⁵ Vega has a contract with Mobitel for national roaming in areas not covered by its own network.

¹⁶ Given that Vega subscribers' calls are mostly off-net due to Vega's low market share, its prices are among the highest in the market (see figure 4).

Figure 4: Average real price of calls per minute charged by companies in Slovenia (in SIT per minute)



Note: In calculating the prices the main pre-paid and contract packages were taken into account. The costs of handsets and rental charges were excluded from the calculation. The market shares of operators serve as a driver for on-net and off-net call allocation.

Source: GABROVŠEK, 2004, p. 35.

In figure 4, we can see that the prices of mobile calls in real terms were decreasing up to the end of 2002. At the end of 2002 all operators increased their prices. This on-net call price increase was recommended by the ATRP.

At the end of 2003 Mobitel had approximately a 73% market share and was followed by Si.mobil with a market share of around 20%. Debitel held a 4.7% sha, while Vega only commanded a 2.2% share of the Slovenian mobile market (STERGAR, 2004).¹⁷ Mobitel and Si.mobil were identified by the ATRP as operators with significant market power (SMP).

Slovenia's mobile market is very concentrated because the leading operator has a market share that exceeds 70%. In our opinion, the reason for the concentrated market structure in the Slovenian mobile telephony market lies in the late granting of licences to competing firms. Mobitel practically had a monopoly up to April 1999. The second reason lies in the relatively high interconnection prices between operators. The large differences in prices between on-net and off-net calls have caused so-called tariff mediated network externalities (LAFFONT & TIROLE, 2001, p. 201). This means that, for the user, the network with the most users has greater value.

¹⁷ Market shares of operators measured in terms of revenues in the period from 1.7.2002 to 30.6.2003 were as follows: Mobitel 76%, Si.mobil 21% and Vega 3% (ATRP, 2004, p. 12).

Therefore, even with its lower on-net calls, Vega could not gain any greater market share.

Similar anomalies to those with GSM concessions were observed when the UMTS licences were granted¹⁸. Currently, only the leading operator Mobitel has been given this licence, which could lead to a similar situation in terms of market share as in GSM technology.

■ Comparing Slovenia's telecommunications market with selected countries

To conduct an international comparison between Slovenia (SI) and other countries, we chose three countries from the EU; Austria (A), Finland (FIN) and Portugal (P), and three countries from the EUCCs; Czech Republic (CZ), Poland (PL) and Hungary (HU). The reason for choosing Austria, Finland and Portugal was that they, like Slovenia, represent small economies in the EU. Whereas Austria was characterised by its long history of state ownership of the fixed incumbent operator, Finland, on the other hand, is a country with a long tradition of liberalised telecommunications. Portugal is comparable to Slovenia in terms of GDP per capita. Hungary was chosen because the state withdrew from the fixed incumbent and sold its share off to private investors, while Poland and the Czech Republic are examples of countries with a relatively slow telecommunications liberalisation process.

Fixed telephony

In comparison with the benchmark countries, Slovenia is quite unique in its fixed telephony market with no competition challenging the state-owned monopoly operator Telekom Slovenije¹⁹. In the selected EUCC countries alternative operators are already providing fixed telephony services and incumbents have consequently begun losing market share (4th Report, 2003, pp. 82, 90, 106). Similarly, in the benchmark EU countries, competition in the fixed telephony market has even increased (9th Report-Annex I, 2003, p.14).

¹⁸ Due to high concession fees other companies were not interested in a licence for UMTS.

¹⁹ Telekom Slovenije is actually facing competition in the market for international calls from VoIP operators, but VoIP does not represent the same quality of service.

Table 5: Incumbents' public fixed voice telephony tariffs

	<i>SI</i>	<i>CZ</i>	<i>HU</i>	<i>PL</i>	<i>A</i>	<i>FIN</i>	<i>P</i>	<i>EU average</i>
Monthly rental - residential (€)	10.99	9.47 ⁽¹⁾	12.05	9.58	15.98	13.46	14.64	14.20
Local call - 3 minutes (c€)	8.09	13.3	11.83	7.85	16.8	15.7	14.3	13.5
International call to near country ⁽²⁾ - 10 minutes (c€)	1.8	2.53	2.11	3.28	2.47	1.84	2.65	2.12
International call to the USA - 10 minutes (c€)	1.8	2.88	2.53	5.47	3.77	4.84	2.94	2.12

⁽¹⁾Also includes € 3.17 credit incentives.

⁽²⁾For EU countries this refers to a nearby EU country.

Source: 4th Report, 2003, pp. 33-44 and 9th Report-Annex I, 2003, pp. 67-79

Nevertheless, a comparison of the tariffs charged by incumbents for line rental (table 2), local and international calls shows that the Slovenian incumbent's prices are among the lowest of the benchmark countries and below the EU average. Even a comparison of tariffs in PPP terms shows that the Slovenian tariffs charged by the incumbent are among the lowest of the benchmark EUCCs. Therefore, Slovenia is faced with an interesting result: low prices without the existence of any real competition in the market. These low prices may be theoretically explained as the strategic behaviour of the fixed incumbent. We can assume that the incumbent has used predatory prices in combination with high interconnection charges in the past to preserve its monopoly ²⁰.

Table 6: Fixed-to-fixed interconnection charges for call termination on the fixed network of the incumbent, and fixed-to-mobile interconnection charges

	<i>SI</i>	<i>CZ</i>	<i>HU</i>	<i>PL</i>	<i>A</i>	<i>FIN</i> ⁽¹⁾	<i>P</i>	<i>EU average</i>
Local level (c€)	0.77	1.30	1.85	0.72	0.85	0.96	0.76	0.62
Single transit (c€)	1.07	1.62	2.40	1.12	1.30	1.18	1.09	0.96
Double transit (c€)	1.71	2.06	2.76	1.53	2.25	2.64	1.66	1.66
Fixed-to-mobile (c€)	22.16	11.59	15.21	17.95	12.8 8	12.93	26.8 3	17.45

⁽¹⁾ The price refers to the operator Sonera.

Source: 4th Report, pp. 57, 58, 62 and 9th Report-Annex I, pp. 24, 25 and 29

²⁰ This assumption, of course, needs to be empirically tested in order to be confirmed.

On the other hand, the most important issue in the liberalised telecommunications market is identifying the appropriate level for interconnection charges. In the past, high interconnection prices prevailed and they only approached the EU average as late as in August 2003, after the ATRP enforced appropriate measures. Due to a further fall in average EU interconnection prices, the current Slovenian interconnection charges are still above the EU average. In spite of this, compared to the benchmark countries, Slovenia still has the lowest prices for single transit. The lowest prices at the local level and for double transit are in Poland (table 3). Yet, the circumstances in the Slovenian fixed-to-mobile interconnection market are quite different. The fixed-to-mobile interconnection charge is 27% higher than the EU average and is among the highest out of the benchmark countries, while the Czech Republic, Hungary, Austria and Finland have charges that are below the EU average (table 3).

Mobile telephony

In table 4, we present the number of mobile operators that provide the second generation of mobile services (2G). In all benchmark countries there are three or more 2G mobile operators. Slovenia with its three 2G operators is therefore comparable to other countries.

Table 7: Number of mobile operators and penetration rate in benchmark countries

	SI	CZ	HU	PL	A	FIN	P
Number of 2G mobile operators	3	3	3	3	4	4	3
Assigned UMTS licence?	Yes	Yes	No	Yes	Yes	Yes	Yes
Number of assigned UMTS licence	1	2	0	3	6	4	3
Penetration rate (%)	83	88	72	40	86	89	83

Source: 4th Report, 2003, 45, 23, 84, 108, 46 and 9th Report-Annex I, 2003, pp. 41, 37

In terms of mobile penetration, Slovenia is also comparable to the benchmark countries, where it exceeds the EU average by 2 percentage points and the EUCCs average by 38 percentage points. Slovenia however lags behind the EU benchmark countries, Czech Republic and Poland in granting UMTS licences. Currently, only the leading operator has been awarded a 2G licence in Slovenia, while in other countries more than one licence has been granted.

Nevertheless, Slovenia's mobile market is more concentrated than in the EU. The leading operator has a market share that exceeds 70%, while the leading operators in nine countries of the EU do not exceed a 50% market share and only in one other country (Luxemburg) does the leading operator exceed a 60% market share (9th Report-Annex I, p. 42).

■ Review of regulation in Slovenia

Public utilities that were once regarded as natural monopolies have transformed into parts that are still natural monopolies and into competitive activities (Hrovatin, 1994, p.435). A natural monopoly in telecommunications is, similar to other utilities, limited to networks that should be accessible under equal, transparent and non-discriminatory conditions in order to establish competition between the providers of telecommunications services²¹. The liberalisation of telecommunications has meant that the monopoly structure with one operator has changed into a structure of various companies competing against each other. The changing market structure was accompanied by changes in European and Slovenian legislation, which replaced control over the dominant players with control over operators with significant market power (SMP).

In this section we analyse regulatory progress from the start through to the end of 2003 when the Telecommunications Act (Ztel-1) was in force. The Telecommunications Act (Ztel-1) complied with the EU legislation that was applicable before adoption of the new EU framework. In April 2004, the Telecommunications Act (Ztel-1) was replaced by the Electronic Communication Act (*Official Gazette*, no. 43/04), which adopted a regulatory framework that has been applicable in the EU since July 2003. Since the new act has only been in force for a few months, the ATRP has not yet determined the relevant markets for services, nor assessed the competitiveness of those markets.

²¹ Competition between networks providing similar services has questioned the existence of natural monopolies in networks. "Determining whether a particular area of activity is a natural monopoly is a complex process. Natural monopolies are vulnerable to technological development. Thus, the argument that telecommunications, particularly the access network or local loop, is a natural monopoly has been significantly weakened by development of new technologies based on wireless distribution. This gives customers access to exchange without necessarily constructing fixed link networks" (BALDWIN & CAVE, 1999, p. 205). This issue is analysed below.

Regulatory authority

The Telecommunications, Broadcasting and Post Agency (ATRP) was established in the second half of 2001 and is responsible for competition and regulation of telecommunications and electronic media in Slovenia. In autumn 2002 postal services also came under the ATRP's jurisdiction. In its institutional regulatory structure Slovenia attempts to mirror the British regulatory practice with professional and politically independent regulators. The ATRP is headed and represented in legal and public matters by a general director, who is appointed for a five-year term by the government on the basis of a public tender. The independence of the director of the ATRP is ensured by the fact that s/he cannot be dismissed during his mandate without being at fault.

The ATRP is a legal person under public law and acts independently of the ministry in charge of telecommunications. The ATRP should act with the purpose of ensuring, primarily in the interests of users, the transparent and non-discriminatory functioning of markets. It performs all regulatory duties stipulated by EU law.

In financing terms, the ATRP in Slovenia follows the prevailing model in the EU ²². The sources of the ATRP's funding are fees for numbering, radio frequencies, licences and notification. In fact, these financial assets are collected in the national budget and then allocated to the ATRP.

The ATRP faces many problems in its operations. The first problem is linked to its staffing structure. The day the ATRP began operating employees of the Telecommunications Authority were transferred to work for the ATRP. As these employees are mainly professionals with technical knowledge, the ATRP lacks personnel with legal and economic expertise or knowledge of the field of regulation ²³. On the other hand, the ATRP has problems enforcing its discretionary right as an independent regulator. Its independence was severely limited by the Slovenian government in 2002 when the regulator was given the task of following inflationary targets ²⁴. In

²² In the EU only two countries (Germany and France) finance 100% of their NRA from the national budget, while Italy uses 69% of financing from the budget. All other EU countries apply a sector approach to financing (8th Report - Annex II, 2003).

²³ Understaffing, an unsuitable education structure and employees' connections with operators are common weaknesses of regulators in the EU countries. For more here, see HROVATIN, 2001.

²⁴ The background to the government's decision to follow the inflationary goal was that, in order to join the ERM2, Slovenia had to lower its inflation. In July 2004 Slovenia entered the ERM2.

our opinion, this government measure should be unique. It should be used as a one-off remedy if the independence and discretionary rights of regulatory agencies in Slovenia are to be preserved. The discretionary power of the ATRP was also jeopardised by market operators. It took some time before they started to respect its decisions ²⁵.

Enforcement of the regulatory principles: progress and current status

In this section we analyse the ATRP's activities as defined by the old legislation (Ztel-1). We point out its success and failure in enforcing the competition rules as prescribed by legislation ²⁶. We find that the main deficiencies have been in carrier selection and pre-selection, the unbundling of ADSL services and ensuring access to the local loop and network interconnection. Price rebalancing has also not yet been fully completed.

Despite the liberalisation and deregulation of telecommunications, regulation is still needed in order to boost the competitiveness of the market. In table 5 (see the Appendix) we see that the subject of regulation is those companies that have the status of operator with SMP. The key to ensuring a competitive market is therefore to identify the operators with SMP. Not surprisingly, the ATRP assigned the status of an operator with SMP to Telekom Slovenije in May 2003 (see table 5 in the appendix). The ATRP has also taken measures to identify operators with SMP in the mobile telephony market. In November 2002 the ATRP assigned the status of an operator with SMP to Mobitel and Si.mobil for one year and extended it for another year in December 2003.

Interestingly, the status of an operator with SMP was also assigned to Si.mobil, which has a market share of less than 25%. When deciding on the

²⁵ For example, Telekom Slovenije published its prices in September 2002 without the prior approval of the ATRP. The ATRP responded with appropriate measures against using the new prices (KOMPARA, 2002).

²⁶ The Slovenian government prescribed a price-setting methodology for operators of the fixed public telecommunications network and services and the operators of leased lines with SMP under the "Decree on the methodology of price setting for fixed public telecommunications network and services" (*Official Gazette*, no. 25/02). This decree states that price setting must be based on the costs of efficient service provision. Prices are set according to a price cap, which is defined for a basket of services. Price-cap regulation is consistent with the prevailing practice in the EU. The majority of EU countries (8 out of 15) have decided on price-cap regulation, while they use different methods for cost standards (9th Report- Annex II, 2003, pp. 5, 6, 7).

status of Si.mobil, the ATRP also took into consideration other criteria ²⁷ in line with the Telecommunications Act (Ztel-1) ²⁸.

In Slovenia carrier selection and pre-selection should, as stated by law, be available for long-distance, international and mobile calls. However, as of June 2003 carrier selection had still not been put into practice. Carrier selection and pre-selection are, in fact, not available for local calls and calls to non-geographical numbers (4th Report, 2003, p. 24, p. 118).

The unbundling of the local loop enables competition in the least competitive local markets. It was legalised by the Ztel-1 (Article 65). According to the Ztel-1, operators of a fixed public telephone network with SMP should have published and updated the reference offer for unbundled access to their local loops and associated installations. The ATRP should have prescribed the elements such an offer must contain. The ATRP identified those elements as late as February 2003, while in March 2003 Telekom Slovenije published a reference unbundling offer. There is one operator with an agreement for local loop unbundling in place, and the second is in the process of negotiations (ATRP, 2004, p. 23; 4th Report, 2003, p. 119). In Slovenia the reference interconnection offer (RIO) has already been published. Due to many contentious issues, in November 2003 the ATRP ordered Telekom Slovenije to widen and supplement the reference interconnection offer (RIO) so as to improve network interconnection conditions and enable easier and faster market entry for alternative operators (ATRP, 2004, p. 20).

In line with EU and Slovenian legislation, the prices of fixed telephone network services and services of operators with SMP should be unbundled so that users do not have to pay for any services they are not using. The ATRP has been ineffective in achieving the complete unbundling of services. One example is the ADSL service offered by SiOL (a subsidiary of Telekom Slovenije). A potential user cannot subscribe to the ADSL service before subscribing to the ISDN ²⁹ service first (and paying the connection charge), even though the two services are technically independent of each other. This

²⁷ The ATRP should take into consideration the operator's capacity to influence market conditions, the extent of operators' operations in comparison to the size of the market, the operators' control of resources for access to end-users, the operators' access to financial resources and the operators' experience in providing products and services (Ztel-1, Article 67).

²⁸ The Telecommunications Act (Ztel-1) provides the ATRP with the right to decide that operators with less than a 25% market share also have SMP.

²⁹ ISDN services are provided by Telekom Slovenije.

bundling of the ADSL service is, on one hand, a consequence of the absence of competition and, on the other and even more importantly, a consequence of the ATRP's inactivity, which should be taking measures to unbundle such prices.

One of the EU's requirements regarding pricing policy is the rebalancing of the prices of services to their cost. In Slovenia such price rebalancing has not yet been completed. Progress with price rebalancing and its current status are as follows ³⁰ :

- The ATRP is halfway towards establishing a methodology for price regulation. It has to define the basket of services, the starting level of prices for services for each individual basket and the value of the price cap for each individual service. This has not yet been carried out. Accounting standards for monitoring these costs have also not been established, although an operator has to submit a cost analysis for each individual service it provides to the ATRP in order to get price approval. This means that the ATRP has actually requested separate accounting for the individual services of fixed public telephony and leased lines, but it has been very weak in monitoring and supervising these costs in line with EU recommendations on the accounting of network interconnection and leased lines. It seems that the ATRP has been preoccupied with its formation and a lack of information, time and experienced staff. It consequently still relies on benchmarking, which is gradually being abolished in EU countries ³¹, rather than cost-related prices ³².

- Since March 2002 the ATRP has gradually been reducing interconnection charges for access to the network of Telekom Slovenije. Finally, in August 2003 interconnection prices reached the EU average. Prior to this date, charges for access to the network were higher than prices for local calls, therefore any real competition was rendered impossible. Despite using the benchmark methodology in setting network interconnection charges, we think that the ATRP's intervention in the interconnection market

³⁰ For details, see ATRP, 2004 and 2003.

³¹ In 2002, only one country (Denmark) has been using benchmarking against the EU in setting interconnection prices, instead of using the cost principle (8th Report-Annex II, 2002, p.7). In 2003 Denmark adopted the cost principle as well (9th Report - Annex II, 2003, p.8). In the EUCCs, benchmarking is still used in Poland and Romania (4th Report, 2003, p.55).

³² In the second half of 2003 the ATRP prepared a model for calculating the cost of efficient service provision for network interconnection. The model enables the calculation of cost-oriented prices (ATRP, 2004, p. 19). Even though the model was created, in 2003 the benchmarking methodology was used instead.

was a great success and contributed significantly to improving competitiveness in the field of fixed telephone network services.

- Fixed-to-mobile interconnection charges are evidently too high (27% higher than the EU average). Hence, the ATRP should use its discretionary power to cut these charges.

- Mobile-to-mobile interconnection charges in Slovenia used to be too high. We can assume that mobile operators kept unreasonably low on-net call prices and subsidised them through high off-net call prices. On the other hand, the ATRP came to the conclusion that interconnection charges were too high. To prevent this, it introduced an asymmetric model of call termination prices at the end of 2003. The asymmetric model means that operators with fewer subscribers are entitled to higher prices. The asymmetric model was accepted by Mobitel and Si.mobil, but rejected by Vega, which maintains its view that the ATRP should regulate end-user prices. The ATRP argues that asymmetric prices improve competitive conditions in the market and that an asymmetry of prices is undoubtedly useful for smaller operators. The ATRP's analysis also shows that ratios between call termination prices and the prices of on-net calls are comparable to the EU average after the asymmetric model was introduced (ATRP, 2004, pp. 22-23).

- The rebalancing of monthly fixed line rental charges has not yet been completed as they are still 23% below the EU average. The main reason for this was the inflationary anchor. As mentioned previously, in 2002 the government ordered regulators to follow their inflation targets (JENKO, 2002). The programme of further rebalancing also included the introduction of two new subscriber packages. In February 2003 the ATRP approved Telekom Slovenije's decision to introduce two subscriber packages instead of one. Telekom Slovenije has not introduced these packages yet for macroeconomic reasons (ATRP, 2004, p. 20). Furthermore, the low price of local calls (40% lower than EU average) also needs to be rebalanced. Based on low rental charges and the prices of local calls, we can expect higher prices for international calls. However, our benchmark analysis shows that prices for international calls are also below the EU average³³. This implies that there is no cross-subsidising between local and international calls, as was the practice in the past.

³³ VoIP operators have even lower prices than Telekom Slovenije, but VoIP services are not the same quality and do not represent the same kind of service.

- The ATRP has also taken measures in the internet market. Nevertheless, dial-up Internet access costs for residential users are high due to high ISP charges (above the EU maximum), which implies that price rebalancing in this market still has to be performed (4th Report, 2003, p. 119). The market is served by 10 operators, but SiOL (a subsidiary of Telekom Slovenije) with its 44% market share is the leading operator. On the other hand, the prices of ADSL (measured in the transmission of 1Mbit/s) are far below the EU average. The ADSL market is practically only served by SiOL. To create better conditions the ATRP ordered Telekom Slovenije ³⁴ to introduce a new price model, which is more suitable for new operators when they enter the ADSL market. The new model was introduced in November 2003.

- As early as 2002 the ATRP applied measures in the leased lines market. The prices for leased lines are comparable to the EU and in some cases even lower than the EU average.

■ Evaluation of (de)regulation and policy guidelines for further liberalisation

We have already evaluated the role of regulation in Slovenia. We would now like to assess the future outcome of the liberalisation process in Slovenia in both fields, namely: (1) allowing new entrants to access the incumbent's network using carrier selection and pre-selection; and (2) allowing new operators to build up and/or to connect to existing backbone and access networks.

We do not expect Slovenia to follow a path different to other European countries regarding the number and geographical coverage of alternative telecommunications networks. Slovenia will have to live with the single fixed access network owned by Telekom Slovenije, which covered almost 100% of the population many years ago. A similar European-type policy of the regulatory authority is needed to grant access to the incumbent's network on a fair and non-discriminatory basis.

³⁴ Telekom Slovenije is a supplier of infrastructure that consists of an access network and a backbone network ATM.

In August 2003 the ATRP took a decisive step in setting termination charges at the average EU level. For the first time in Slovenia, termination charges fell under the incumbent's tariffs, thus enabling a positive difference between the two. This was the prerequisite for the entry of new players to the Slovenian telecommunications market. After the Reference Interconnection Offer is finally put in place, all the conditions for competition in the fixed telephony market will be satisfied. The incumbent will retain its market-leader and price-setter positions, whereas the success of new entrants in the fixed telephony arena will primarily depend on the incumbent's price level and their own competitiveness and financial strength. The small number of fixed voice telephony licences already granted by the regulator and the delay in launching carrier selection and pre-selection services in Slovenia is primarily due to supply-side factors: small and financially weak (domestic) companies, and the small size of the market, which does not attract any big international players.

The methodology used by the ATRP (imposing the average EU level for termination charges) was the best solution in the short-term – instead of long and tedious calculations on the basis of actual cost data provided by the incumbent – termination charges were lowered in one decisive move and a positive difference was established. The future holds the serious and complex task of analysing the cost structure of the incumbent telecom operator and setting termination charges on a cost basis – an activity which will probably be carried out in 2005 after players with SMP are identified by the end of 2004. Instead of waiting for the results of cost analysis for another year, the benchmarking approach has allowed Slovenia to catch up by one year in the liberalisation process.

In Slovenia there is only one access network that fully covers the population. An alternative cable television network was built in the 1990s, but does not cover more than 45% of households. Only the biggest cable operators have upgraded their networks to provide return path services. With such a limited choice of access networks, special attention should be paid to termination charges. The average EU level, which was imposed as a standard in Slovenia, is certainly not cost-based, and is therefore biased in one direction or another. From the temporary results produced by a cost simulation model (which had not been confirmed nor published by July 2004) prepared by the ATRP, it seems that actual termination charges in Slovenia are below the cost of providing these network services. If this is confirmed, such a biased approach does not stimulate investment in new (alternative) telecommunications networks. Setting termination charges at this level may deter potential investors from building new, or expanding existing, alternative

networks. The imposition of cost-oriented termination charges is needed for two reasons: to ensure a fair distribution of revenues from use of the incumbent's network and to provide adequate incentives to invest in new telecommunications networks.

There is a widespread belief in Slovenia that setting termination charges at the appropriate (cost) level will automatically bring about competition in the field of fixed telephony. Setting the rates at this level – the argument goes – ensures the entry of new alternative operators to the industry. The incumbent operator in Slovenia enjoys economies of scale and operates in a highly efficient way. The incumbent will be tempted to continue with the same price policy: low end-user prices of calls (close to predatory pricing policy) to force any new entrants to offer even lower prices to attract customers and to simply deter them from entering the industry. Alternative operators will only achieve small market shares at the beginning and – given the limited size of the market – not achieve or never achieve the minimum efficient scale of production. Given the financial weakness of (existing) alternative operators their success is not taken for granted. It may well be the case that their margin, as defined by the regulator (termination charge) and the incumbent (end-user price), will not cover costs, so their market success is not guaranteed.

We must point out a change in the strategy of the incumbent operator regarding the price of domestic calls. Previously when telecom operators in other EU countries underwent a rebalancing of tariffs the incumbent in Slovenia was prevented from doing so, mainly for political reasons (inflation targets etc). When inflation came under control and prices were liberalised, Slovenia had already achieved extremely high penetration rates in the mobile sector (due to competitive pricing in the sector) and fixed-mobile substitution had already begun. The incumbent abandoned the rebalancing ideas and voluntarily chose to continue with the pattern of low call prices to ease substitution pressure. Interestingly, this came at an appropriate time to deter alternative operators from entering the carrier selection and pre-selection business.

We can anticipate this kind of development in Slovenia: the incumbent is economically preventing any successful entry by alternative operators with very competitive prices overall. The high volume of traffic and efficiency of operations form the basis of the incumbent operator's profitable business. On the other hand, the low volume of traffic will not allow alternative operators to break even.

It is therefore essential that the regulator closely monitors the incumbent's tariffs and takes all the necessary steps to prevent any predatory pricing. A certain difference between termination charges and the price of calls is a precondition to the successful entry of new players into the market. What the magnitude of this difference will be in Slovenia remains to be seen in the future when the first alternative operators enter the fixed telephony market. The independent telecom regulator (ATRP) was established in Slovenia with a significant delay. The first serious interventions by the regulator were carried out as late as 2003. It is therefore a common belief that the delay in the liberalisation process in Slovenia is due to the delay in setting up the independent regulatory authority. This reasoning underpins the unrealistic expectations that Slovenia will surely follow the liberalisation pattern of other EU countries, only lagging behind by a couple of years. We believe that fair competition between the various operators using the incumbent's infrastructure will not be achieved in a couple of years, or will simply never be achieved.

As we can see in other EU countries a tremendous amount of regulatory work was carried out to set up a regulatory framework in which alternative operators compete with the incumbent on a fair basis – with all using the incumbent's network. It is very difficult for a new operator, and extremely difficult for a new operator in a small market, to achieve economies of scale comparable to those of the incumbent.

We have seen in Slovenia in the past that the incumbent's subsidiary company offering internet services enjoyed privileged treatment that allowed the subsidiary to grow fast and achieve significant economies of scale ahead of its competitors. In 2004 the incumbent's subsidiary company remains the only provider of ADSL services to households in Slovenia.

Examples from other countries, even those that have achieved substantial success in liberalising the telecoms sector, show it is very difficult to provide a regulatory framework where alternative operators enjoy fair treatment from the incumbent network operator. As we can see from the number of unbundled local loops or the market shares of alternative operators offering voice services, the results are not very encouraging. The best results are achieved in the voice telephony sector, while much poorer results are achieved in the data and especially broadband fields. After this fairly negative assessment of the liberalisation process in Slovenia in the existing fixed telephone network, we now move on to the second topic of this section, the development of alternative networks.

Slovenia already has an alternative access network owned by cable operators, which covers 45% of the population. These networks are privately owned and still fragmented. Consolidation is needed to bring those networks together and to establish one major cable operator company. If cable networks are also fully modernised, this may create the possibility of choosing between two fixed networks offering video, data and voice to almost one-half of the Slovenian population.

Another difficult task for the regulator is to provide an appropriate regulatory framework for fair competition between the fixed telephone network and cable television network. The telephone network in Slovenia is already used to provide voice, high speed internet and video over IP to end-users, and cable operators are also offering cable internet and testing VoIP. In 2003 ADSL overtook cable internet in Slovenia and we estimate that in 2004 ADSL accounted for roughly 2/3 of broadband household connections and cable 1/3. The chance of having two different fixed networks offering broadband services (although the cable network has a limited reach) provides Slovenia with the opportunity to expand its broadband penetration. Countries like Belgium, the Netherlands, Sweden and Denmark have achieved broadband penetration rates much higher than the EU average – one reason being the competition between two different networks offering broadband services. Slovenia may follow this pattern of the quick deployment of broadband and double broadband penetration during 2004 to achieve 5% penetration by the end of 2004.

The incumbent telephone operator has been exploring the possibility of acquiring major cable networks, but this seems to have been rejected. Nevertheless, it is the task of the telecommunications regulator to provide not only for structural separation, but also for ownership separation between the telecom company and cable operators as well.

The third-generation mobile networks may offer data services in a cost efficient way. Mobile networks also achieve good coverage of the population at a relatively low cost per user. The development of third-generation mobile networks may bring the availability of high-speed data to almost the entire population. One mobile operator is already offering EDGE services with almost complete coverage, and the incumbent's subsidiary company has already covered 50% of population with the UMTS signal. The third-generation network will thus become the second largest access network in Slovenia offering voice and high-speed data services. New mobile networks are thus helping to dissolve the digital divide in Slovenia.

Slovenia has not been successful in attracting any new players to the UMTS auction. Only one licence was granted to the incumbent's subsidiary company, which brings Slovenia back to a monopoly position in the market for third-generation services. This may severely limit possibilities for any rapid growth of third-generation services in Slovenia if the provider adopts a monopolistic approach to development of the market. The regulator will have to follow this area closely and we expect that the provider will be given SMP status by the end of 2004, thereby giving the regulator the necessary powers to apply remedies to this sector if needed.

The privatisation of the incumbent telecom company in Slovenia has a long history of ill-conceived and unrealised plans. Slovenia is one of the few European countries where the full liberalisation of telecommunications services has been achieved (in the legal framework) without the privatisation of the main telecom company. This gives the government a dual role: to force the full liberalisation process through independent regulator (noting political influence cannot be neglected here) and to force the telecom company to improve microeconomic efficiency through corporate governance channels (which certainly encourage monopolistic practices).

The liberalisation of the Slovenian telecommunications sector has not yet produced any substantial changes in market structure: only in July 2004 did we see the first operators offering carrier selection and pre-selection. It will take some years for market shares for international calls to change significantly. In the mobile sector, the incumbent operator is retaining its high market share, the second mobile operator is taking all the measures possible to safeguard its market share and the third has limited chances of survival. In Slovenia, it is most likely that only one third-generation mobile network will be built. Cable operators are not building new networks and are still modernising the existing cable networks to offer data services along with video services.

With such a limited choice of alternative networks, the regulator will have to apply several measures to enable fair and non-discriminatory access to the existing infrastructure for new operators. This may encompass the fixed telephone network and UMTS network as well.

A possible date for the privatisation of the telecom company has been announced on various occasions, but never taken seriously. We do not expect any decisive turn in this direction before 2005. With complete coverage and extremely good technical standards, it may be interesting to present a model of structural separation between Loop Co and Net Co,

instead of privatising the existing company. This might easily bring about efficient competition in the sector. Since this structural separation is just as complex as privatisation it is improbable Slovenia will follow this path.

The final argument behind the privatisation issue is that privatisation should not be carried out only to replace a state monopoly with a private monopoly. To counteract this thinking, the ATRP needs to adopt a firm and decisive position to prove that the regulator has all the means to impose fair competition on the market, regardless of the ownership structure of the incumbent telephone company. Slovenia's accession to the European Union has vastly improved the chances that this thinking will prevail.

■ Conclusion

Slovenia has a highly developed telecommunications market. It lags behind the EU only in broad band connections, but even in this segment the situation is constantly improving. In comparison with the benchmark countries, Slovenia is quite unique in its fixed telephony market, as there is no competition to challenge the state-owned monopoly operator Telekom Slovenije. Nevertheless, the comparison of incumbent tariffs shows that the tariffs of the Slovenian incumbent are among the lowest out of the benchmark countries and below the EU average. On the other hand, the Slovenian mobile market is also concentrated, while the leading operator Mobitel (a subsidiary of the incumbent) has a market share that exceeds 70%. In spite of this, competition among operators in the mobile market drives on-net prices downwards, even below the cost of providing them. In our opinion, the reasons for the concentrated market structure in the mobile telephony market lie in the late granting of GSM licences to competing firms and the high price differences between on-net and off-net prices.

The independent national regulator (ATRP) was established in Slovenia with a significant delay. The first serious interventions of the ATRP came as late as in 2003. In August 2003 the ATRP took a decisive step in setting the incumbent's fixed interconnection charges at the average EU level. Even though price-cap regulation is prescribed by law in Slovenia, the ATRP has relied on benchmarking, which is gradually being abolished in EU countries. However, the benchmark methodology used by the ATRP was the best solution in the short-term, while low interconnection charges are a prerequisite for the entry of new players to the market. After the reference

interconnection offer was finally put in place, the conditions for competition in the fixed telephony market were met. The ATRP has taken measures, among others, in the mobile telephony market in order to cut the off-net prices of calls. However, Slovenia has not been successful in attracting any new players to the UMTS auctions. Only one licence has been granted to the leading mobile operator, Mobitel, which brings Slovenia back to a monopoly position in the market for third-generation services. This raises concern since the third-generation network will be, beside the fixed access network of the incumbent, the second largest access network in Slovenia. Despite the fact that the ATRP has advanced its activities and taken measures in all segments of the telecommunications market lately, not all of its work has been done yet to ensure full competition in the telecommunications market.

Future tasks in the field of regulation are linked to the new Slovenian Electronic Communications Act, which adopted a regulatory framework that has been applicable in the EU since July 2003. The main emphasis of the new Slovenian and European legislation lies in integrated access to markets. Therefore, attention is focused on determining the relevant markets for a service (for type of product and geographically) and on ascertaining the competitiveness of those markets in both static and dynamic contexts. Regulation will be necessary if the national regulatory agency finds out there is no effective competition in the market. Therefore, in accordance with the new legislation, the main activity of the ATRP will have to be geared towards market analysis, definition of the operators with SMP where markets are uncompetitive and, consequently, to taking measures that limit the operators with SMP. As shown in the past, legislation alone is not worth very much if it is not fully implemented. Special emphasis will then have to be dedicated to ensuring the entry of new providers in the future and stimulating the development of alternative infrastructures, since this is the only path to the normalisation of market structure.

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Appendix

Table 8: Subjects of regulation and the companies regulated by the ZTel-1

<i>Activity</i>	<i>Regulated company</i>	<i>Regulated price</i>	<i>Subject of regulation</i>
Network interconnection	1. Operators of a fixed public telephone network with SMP (Telekom Slovenije) 2. Leased lines operators with SMP (Telekom Slovenije) 3. Mobile operators with SMP (Mobitel, Si.mobil)	Prices of network interconnection between - Fixed operators - Fixed and mobile operators - Fixed operators and providers or resellers of services - Mobile operators and providers or resellers of services - Mobile operators	1., 2. Reference interconnection offer (RIO) in OJ, ensure reasonable access and interfaces (ex-ante regulation) 3. Reference offer and commercial contracts, must obtain approval for general conditions (ex-post regulation based on complaints)
Unbundled access to the local loop for fixed public telephone network - (shared use of facilities of operator with SMP) - (open access to networks and/or services)	Operators of a fixed public telephone network with SMP (Telekom Slovenije)	Prices for access to the local loop (reimbursement)	- Reference unbundling offer - Cost-oriented prices - Published objective conditions - Respond to request for access thoroughly and promptly
Leased lines (and required interfaces)	Leased lines operators with SMP (Telekom Slovenije)	Prices for leased lines	Reference interconnection offer (RIO)
Other activities: - providing of fixed public telecommunications services	Operators of a fixed public telephone network with SMP (Telekom Slovenije)	Other prices of services: - Prices of calls in fixed public telecommunications network - subscription charge - connection charge - Internet	Cost-oriented prices in accordance with the act (but, in practice: benchmarking)
Universal services	Provider of universal services (Telekom Slovenije)	Prices of universal services	- Scope of services - Level of affordable prices - Quality of services

Source: ZTel-1.