# 4 OPEN ACCESS IN GREECE

## Panos Georgiou, Fiori Papadatou

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## 4.1 Introduction

This report deals with the current status of scholarly communication and open access in Greece and in particular focuses on e-publications and related content available in digital format on the web.

Greek scientific and research community has always been "productive" in terms of publications of all kinds of types and formats: articles, monographs, book chapters, conference papers etc. Since the establishment of the modern Greek state, about 150 years ago, several hundreds journals and magazines have been publishing the work of the Greek authors, researchers and scientists.

However, these published works represents only a small proportion of the total research output of the country, as the majority of these works was, and still is, being published in international journals.

This landscape remained rather unchanged until the end of '90s and the beginnings of 2000, when the improved telecommunication infrastructure and the considerable EC and national funding for related projects, escalated the process: new publications, adoption of peer review processes, new ejournals, online versions of printed titles, massive digitization of journals archives etc.

Although this evolutionary process took quite a long time to shape, this report states that during the last years the progress concerning scholarly communication and open access in the digital environment is accelerated.

This report has facilitated data and information from: Directory of Greek Digital Resources (http://www.lis.upatras.gr/Libworld/gr\_resources\_EL.php)

which has been developed and is operated by the Library & Information Center of the University of Patras (http://www.lis.upatras.gr/index\_EL.php) (see paragraph 4.7.1), National Book Center of Greece (EKEBI) (http://www.ekebi.gr/frontoffice/portal.asp?cpage=NODE&cnode=138), Open archives (http://en.openarchives.gr/), OAI harvester (see paragraph 4.7.2), ISI Web of Knowledge, Scopus and Ulrich's Web.

## 4.2 SCHOLARLY PUBLISHING IN GREECE

Scholarly publishing in Greece, as the following data shows, deals mainly with printed formats. Nevertheless, although still rather insignificant, there is an increasing activity in e-book market and publishing, while on the other hand we notice a more clear and significant progress in journals e-publishing initiatives.

## 4.2.1 Book publishing

According to the National Book Center of Greece (EKEBI) data (see table 4.1) the Greek book market is still on a complete print environment. By scientific terms and criteria it is obviously oriented to Humanities and Literature, as titles in Natural & Applied Sciences represent a small proportion of the total production and actually seem to have a declining tendency.

#### 4.2.2 E-books

Until November 2009, only three (3) Greek publishers and vendors have been reported to have developed online services for access to Greek books. Within the next 5 months there has been a significant increase of this kind of activity, as 16 publishers and retailers in total have already involved in this business. A detailed view of current e-books market in Greece is presented in Annex 11.3.1 (e-books market in Greece). Beyond these cases all other initiatives concern digitized old historical books as part of wider digital collections with multiple types of material (see paragraph 4.5 below).

Table 4.1. Book titles production per year, subject and language

Subject	2002	2003	2004	2005	2006	2007	2008
Humanities <sup>5</sup>	2,037	2,126	2,278	2,349	2,469	2,554	2,420
Greek books	1,548	1,542	1,632	1,737	1,698	1,772	1,695
Translated books	489	584	646	612	771	782	725
Natural & applied sciences <sup>6</sup>	593	667	639	635	631	614	696
Greek books	351	454	401	417	358	315	345
Translated books	242	213	238	218	273	299	351
Literature	1,720	1,784	1,795	1,947	2,035	2,157	2,117
Greek books	942	990	958	1,095	1,093	1,150	1,263
Translated books	778	794	837	852	942	1,007	854
Children books	1,479	1,490	1,723	1,826	2,117	1,799	2,088
Greek books	553	556	614	558	668	669	662
Translated books	926	934	1,109	1,268	1,449	1,130	1,426
School & educational books	907	644	628	487	822	807	713
Greek books	879	629	610	464	816	794	700
Translated books	28	15	18	23	6	13	13
Art	420	455	576	547	702	759	671
Greek books	292	276	355	336	364	400	312
Translated books	128	179	221	211	338	359	359
Other <sup>7</sup>	737	910	1,022	949	1,006	1,225	1,050
Greek books	417	418	579	488	528	685	577
Translated books	320	492	443	461	478	540	473
Total	7,893	8,076	8,661	8,740	9,782	9,915	9,755
Greek books	4,982	4,865	5,149	5,095	5,525	5,785	5,554
Translated books	2,911	3,211	3,512	3,645	4,257	4,130	4,201

Source: National Book Center of Greece (EKEBI), 2008

<sup>&</sup>lt;sup>5</sup> Includes law, political & economical sciences, education.

<sup>&</sup>lt;sup>6</sup> Includes medicine.

<sup>&</sup>lt;sup>7</sup> Travel guide, maps, gastronomy, practical guides etc.

## 4.2.3 Journals

Taking as a starting point a past study carried out by students of the Department of Librarianship of the Technology Educational Institute of Thessaloniki, we began a deeper and more systematic study of the Greek scholar journals landscape. After the first systematic screening in March 2009, we concluded that a number of 250 journal titles can be considered as scholarly titles or titles of a considerable scientific interest and importance to academics and researchers. This estimation was based upon criteria such as the content, the editorial team, the publishing body, the subject, the review policies, the publishing procedures and in some cases the history of the journal.

Getting further with our analysis since then, and after continuous monitoring, this number has currently been raised to a total of 328 journal titles. The analytical data gathered for each title helped us determine that a number of 163 journals currently adopt a clear stated peer review policy in article submission, editing and publishing processes. In table 4.2 (Greek "scientific" journals overview), below we present an overview of these titles.

In table 4.3 (peer review journals - publishing bodies), we present an analysis of the publishing body types of current peer review journals. It is obvious that the majority of journal titles are published by scientific and professional societies in the area of medicine.

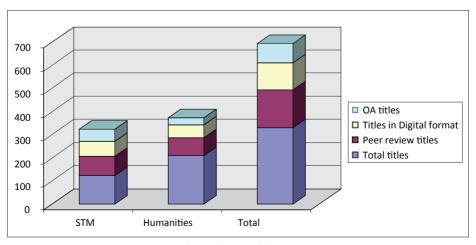


Figure 4.1 Greek journals by main areas

The vast majority of the articles published by these titles are in Greek language, while English is the second most popular language used in some of these titles. Most of these journals are published in irregular basis, and within those which are circulated on a regular basis, the most common are semi annually and quarterly published. According to rough estimations for the last couple of years, more that 4,000 articles are published annually in these titles.

Table 4.2. Greek "scientific" journals overview by subject

Subject	Total titles	Peer review titles	Titles in digital format
Subject	Total titles	Peer review titles	(full text)
Agriculture	1		1
Anthropology	11	2	
Applied sciences & technology	12	8	5
Archaeology	6	2	
Arts	3		
Biology	9	9	7
Earth sciences	4	4	3
Economics	13	8	8
Education	22	8	5
Environmental sciences	6	4	3
History	14	8	4
Law	45	17	18
Librarianship	1		
Literature	34	7	6
Mathematics	2		1
Medicine	87	60	43
Political sciences	11	2	
Social sciences	32	17	10
Sports & recreation	6	4	2
Theology	7	2	1
Veterinary sciences	2	1	1
Total	328	163	118

Table 4.3. Peer review journals - publishing bodies

			Types	of publishing	bodies	
Subject	Peer review titles	Academic	National/ government	Private	Research	Societies
Agriculture						
Anthropology	2				1	1
Applied sciences & technology	8	4				4
Archaeology	2				1	1
Arts						
Biology	9	2		1	3	3
Earth sciences	4	2				2
Economics	8	6		1		1
Education	8	3	3			2
Environmental sciences	4	1		2	1	
History	8			2	4	2
Law	17			14	1	2
Librarianship						
Literature	7	2			3	2
Mathematics						
Medicine	60	2	1	4	1	52
Political sciences	2			1		1
Social sciences	17	2	2	5	2	6
Sports & recreation	4	2				2
Theology	2			1		1
Veterinary sciences	1					1
Total	163	26	6	31	17	83

To get a comparative picture, this number represents about 25-30% of the total number of articles published in international peer review journals by authors affiliated with Greek institutions, according to Web of Science and Scopus data (see table 4.4 Articles by authors affiliated with Greece in international peer review journals).

	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Science & technology	12,026	12,591	12,145	11,101	9,673	8,892	7,499	6,949	6,293	5,847
Social sciences	946	1,159	1,097	1,076	970	827	826	714	667	624
Arts & humanities	113	127	117	112	77	89	94	92	101	89
Total (WoS)	13,085	13,877	13,359	12,289	10,720	9,808	8,419	7,755	7,061	6,560
Total (Scopus)	15,246	14,584	13,830	13,072	11,173	9,757	8,170	7,142	6,548	6,194

Table 4.4. Articles per year by authors affiliated with Greece in international peer review journals

Sources: WoS (lines 2-5, Scopus (line 6)

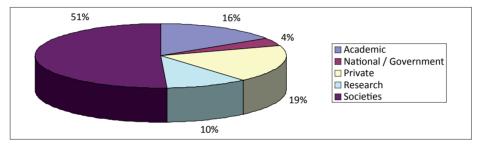


Figure 4.2. Greek journals publishing bodies

## 4.3 OA IN GREECE: AN OVERVIEW

As one may notice in the following paragraphs, although there is significant progress in Greece in the open access issues, which is mainly the result of the rapid evolution in the content management approach driven mainly by academic libraries during the last 5 years.

Nevertheless we ought to pay a tribute to pioneer digital efforts back in late '80s and early '90s, such as:

- The National Documentation Center (NDC) efforts with Journal Holdings Union Catalog, and the Online Catalogue of the National Archive of Print PhD Theses.
- The first Greek bibliographic databases (NDC's ARGO suite of databases,<sup>8</sup> IATROTEK<sup>9</sup>).

<sup>8</sup> http://argo.ekt.gr/

<sup>9</sup> http://www.iatrotek.org/

• The first digital collection, <sup>10</sup> (practically the first institutional repository using Dienst protocol) by the University of Crete back in 1997.

However the most important progress of the Greek digital efforts materialized due to the EC funded National Projects for the development of new services in Greek academic libraries (1996-2000).

The following can be mentioned as the highlights of that period:

- the Greek libraries got the infrastructure and resources needed;
- the foundation of Hellenic Academic Libraries Link (HEAL-Link);
- the Greek Union Catalogue development;
- the development of the first federated Digital Library system for Grey Literature (Artemis) using Dienst.

The next boost came with the continuation of these programs for the next 8 years (2000-2008). During that period the majority of the digitization and indexing projects were carried out. Important developments of that period are:

- HEAL-Link's portal (2001).
- Zephyros, virtual Union Catalogue (2003).
- First Greek signatory of the Berlin Declaration: National Hellenic Research Foundation (2003).
- Kosmopolis digital collection (2004), the first Greek OAI-PMH digital collection by the University of Patras.
- First DSpace instance in Greece: Psepheda by the University of Macedonia (2004).
- First CDSware instance in Greece: Digital Collections of Aristotle University of Thessaloniki (2003).
- First OAI Harvester: openarchives.gr. 11
- Pilot version of the Directory of Greek Digital Resources. 12.
- The University of Patras becomes the 4<sup>th</sup> Greek signatory of the Berlin Declaration (2009) after University of Macedonia (2006) and Alexander Technological Educational Institute of Thessaloniki (2007).

<sup>10</sup> http://dlib.lib.uoc.gr/

<sup>11</sup> http://www.openarchives.gr/

<sup>12</sup> http://www.lis.upatras.gr/Libworld/gr\_resources\_EL.php

## 4.4 OPEN ACCESS JOURNALS

If OA success was only a matter of raw numbers, and not also a matter of advanced services, publishing and editorial processes, and mostly a matter of compliance with open technologies and standards, the case of Greek scientific journals, would have been a success story.

In a total of 118 journal titles with online full text content, 84 of them are providing open access to their full text contents (see table 4.5. Online full text publication types & subjects), while 73 of them are clearly stated as peer review journals. Exactly a year ago, during our last inventory, 65 titles with full text online have been reported while 55 of them OA!

The most interesting remarks from the analysis of the online and OA journal landscape in tables 4.4 - 4.7 can be the following:

- Almost 40% of the titles are published both in print and online while 36% are practically digital archives of active journal titles.
- Fully e-journals represent only 24% (29 journals) of the total digital titles although all but one of them are open access journals.
- The majority (≈40%) of the journals are published in the field of Medicine (mainly by related scientific Societies), with journals in the area of natural & applied sciences accounting for a small number of titles.
- Overall, the various societies seem to be more active in digital publishing, than other types of organizations, while at the same time they lead the race in pure e-journals publishing along with the academic institutions.
- Private publishing houses, although clearly they are still oriented to print & web publications, overall they hold a significant share of the total online market (23%). The most important fact is that they almost doubled their online publications (of any type) since last March (13 titles) and 9 of these titles are OA.
- Despite this ongoing progress, only 21 Greek journals are indexed in the Directory of open access Journals DOAJ. A fact which brings into discussion the issue of promotion and sharing of content in a global perspective (see 7.5).

Do all the above prove that OA is a success? No doubt that there has been a huge progress, but there is still a long way to success, as there are essential aspects of OA where improvement is needed:

Table 4.5. Online full text publication by types & subjects

		<u> </u>		_					Ь	Publication types	on type	(A)				
Subject	5	line rul	Online rull text titles	les		e-Jon	e-Journals		Inof	Journals in print & web	rint &	web	Jour	nal digi	Journal digital archives	ives
	To	Total	Peer r	Peer review	Total	tal	Peer review	eview	Total	Įę.	Peer review	eview	Total	tal	Peer review	eview
	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA
Agriculture	1	0	0	0						0			1	0		
Applied Sciences & Technology	5	5	5	5	4	4	4	4		0			1	1	1	1
Biology	7	7	2	7	3	3	3	3	3	3	3	3	1	1	1	1
Earth Sciences	3	3	3	3					1	1	1	1	2	2	2	2
Economics	8	9	8	9	1	1	1	1	4	3	4	3	3	2	3	2
Education	5	5	4	4					2	2	1	1	3	3	3	3
Environmental Sciences	3	3	8	3	2	2	2	2		0			1	1	1	1
History	4	4	4	4	2	2	2	2	2	2	2	2		0		
Law	18	0	4	0					18	0	4			0		
Literature	9	6	1	1	1	1	1	1		0			5	5		
Mathematics	1	1	0	0						0			1	1		
Medicine	43	33	39	31	12	12	12	12	15	11	14	11	16	10	13	8
Social Sciences	10	8	8	7	2	1	1	1	1	0	1		7	7	9	9
Sports & Recreation	2	2	2	2	2	2	2	2		0				0		
Theology	1	1	0	0						0			1	1		
Veterinary Sciences	1	0	1	0					1	0	1			0		
Total	118	84	89	73	29	28	28	28	47	22	31	21	42	34	30	24

Table 4.6. Online full text publication types & publishing body types

	Publication type			e-journals	Print & web	Archives	Total
		т. 1	Total	11	3	3	17
		Total	OA	11	3	2	16
	Academics	Peer review	Total	11	3	3	17
		Peer review	OA	11	3	2	16
		Total	Total	_	1	3	4
	National	Totai	OA	_	1	3	4
	Government	Peer review	Total	_	1	3	4
		reer review	OA	_	1	3	4
		Total	Total	4	22	11	37
Publishing	Private	Total	OA	3	5	10	18
body types	rnvate	Peer review	Total	3	7	2	12
		reer review	OA	3	4	2	9
		Total	Total	4	4	3	11
	Research	Total	OA	4	3	2	9
	Research	Peer review	Total	4	4	3	11
		1 eei 1eview	OA	4	3	2	9
		Total	Total	10	17	22	49
	Societies	10(41	OA	10	10	17	37
	Societies	Peer review	Total	10	16	19	45
		1 cer review	OA	10	10	15	35
				29	47	42	118

Table 4.7. Online full text journals subjects & publishing bodies types

										,	2	Lucan	edu emos guinand - confone commo forma ma quino		1						
									Publ	ishing l	Publishing body types	bes									
Subject		Acad	Academics		Natio	nal – (	National – Government	ment		Private	ate			Research	ırch			Socie	Societies		
	To	Total	Peer r	Peer review	Total	tal	Peer review	eview	Total		Peer review	view	Total		Peer review	sview	Tot	Total	Peer r	Peer review Total	Total
	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total OA		Total	VO	Total	OA	Total	OA	Total	OA	
Agriculture									1	0											1
App. Sciences & Technology	4	4	4	4						0							1	1	1	1	5
Biology	2	2	2	2					1	1	1	1	3	3	3	3	1	1	1	1	7
Earth Sciences	1	1	1	1						0							2	2	2	2	3
Economics	9	5	9	5					1	1	1	1					1		1		8
Education					$\varepsilon$	3	3	3	1	1							1	1	1	1	5
Environ, Sciences	1	1	1	1					1	1	1	-	1	-	1	П					3
History										0			3	3	3	3	1	1	1	1	4
Law									17	0	3						1		1		18
Literature									5	5			1	1	1	1					9
Mathematics										0							1	1			1
Medicine	2	2	2	2					4	4	3	3	1		1		36	27	33	26	43
Social Sciences					1	1	1	1	5	4	3	3	2	1	2	1	2	2	2	2	10
Sports & Recreation	1	1	1	1						0							1	1	1	1	2
Theology									1	1											1
Veterinary Sciences										0							_		1		П
Total	17	16	17	16	4	4	4	4	37	18	12	6	=	6	11	6	49	37	45	35	118

- still no compliance with open standards and technologies: OAI-PMH, metadata schemas, standardized software (like OJS), etc.;
- poor services for the users: search and retrieval, browsing by various fields, quality of the digital items;
- unspecified business models, which are essential for the viability of the publication;
- unspecified short or long term preservation policies and practices.

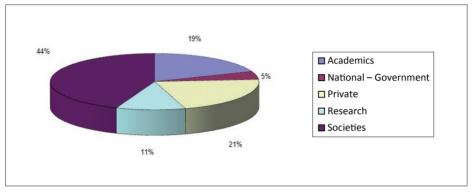


Figure 4.3. OA journals publishing bodies

## **4.5 OA BOOKS**

As far as private bodies are concerned, only two cases are reported that provide total or partial OA to the content of their current publications:

- eBookShop platform (http://www.e-bookshop.gr/) (partially).
- John S. Latsis Public benefit Foundation Electronic Library (http://www.latsis-foundation.org/ldlib/books.aspx?cat=1) (totally).

Other OA books initiatives mainly concern project oriented initiatives of public, academic, research and non for profit institutions. Furthermore in most of these cases OA book content is part of a wider digital collection that often hosts other material as well (See annex 11.2.3. OA digital collections with books).

## 4.6 Repositories & digital collections

## 4.6.1 OA institutional repositories

Usually an institutional repository (IR), is defined as such, by content criteria. A pure IR, if we could say so, would host, manage, preserve and provide access to the whole research output of the institution, namely: PhD and related postgraduate theses and dissertations, reports, data sets, and most important specific versions of institution's staff publications.

Since the software platforms widely used for these purposes (Dspace, Invenio, Fedora, Eprints, etc.), could also handle more types of content, it is more common these days for an IR to host different kinds of collections with different types of content. In most cases these collections consist of journals archives, the institution's historical archives, and all kinds of special collections that the institution may have in its possession. Taking all these into account you can hardly distinguish a pure IR anymore.

This is also the case for the Greek IRs. In most of the cases the IR platforms are being used to host and handle multiple types of collections: grey literature, archives, journal archives, multimedia collections etc. Although this is not an essential issue, is certainly an issue when it comes to specific search and retrieval needs of the end user: along with the research output of the institution's faculty on e.g. water treatment, one might get also a picture of the Minister of Environmental affairs visiting the waste water treatment plant of the institution!

In any case formal OAI IRs are growing rapidly among academic institutions as 17 out of the total 33 academic institutions run their own OAI IRs while two more run a non OAI-PMH compliant IR, based on custom/commercial applications and finally two more keep operating their "IR" on an obsolete Dienst platform. Concerning the rest of the academic institutions, some are already in a transition phase to a new OAI IR, some are rather newly established institutions and they hardly have any data/content at all, and some are very small ones with limited resources to develop and maintain such a service. See a detailed view of Greek IRs in annex table 11.2.4 Greek institucional repositories.

Another significant issue is the absence of Research centers IRs in the relevant list where only Helios, the IR of the National Hellenic Research Foundation is

listed. Out of a total of another 14 research centers nationally, there is no reported activity on management and preservation of their research output.

# 4.6.2 Digital collections

Along with online journals and IRs there was significant progress during the last years concerning the overall digital resources development in Greece, mainly thanks to EU and National funding projects. According to current data of the Directory of Greek Digital Resources (see paragraph 4.7.1) there are more than 200 active resources, including e-journals, journals archives and IRs.

Taking into consideration the previous argument on the IR definition (see paragraph 4.6.1), among these registered resources there is a significant number of OAI compliant digital collections (Annex 11.2.5. OAI-PMH compliant Digital Collections) with about 187,000 additional documents. Thus the total number of documents in all OAI digital collections rises up to 462,000.

Furthermore the Directory of Greek digital resources records a considerable number of non OAI-PMH compliant digital collections, with unfortunately no current data on number of documents of each collection. A comprehensive list of these resources is presented on annex 11.2.6 Non OAI-PMH digital collections.

# 4.7 Harvesters, registries & related initiatives

# 4.7.1 Directory of Greek digital resources

The Directory is an initiative of the Library & Information Center of the University of Patras, and runs in a pilot version since February 2008 at: (http://www.lis.upatras.gr/Libworld/gr\_resources\_EL.php).

The directory aims to be the unique access point of useful information to all scholarly and related Greek digital resources available on the web

• by continuous monitoring and record of all resources: content, access policies, etc.;



Figura 4.4. Directory of Greek digital resources

 by recording and analysing all basic functional information and parameters for each resource: services, technologies, standards, protocols, business models, etc.

The directory collects data from the following types of resource:

- Bibliographical databases.
  - Library catalogs, bibliographies, journal articles.
- Digital collections.
  - journals archives, books, texts & articles collections, images & multimedia collections.
- Institutional repositories.
  - Grey literature, Publications, Educational material, Archives.
- E-journals (fully e-published).
- Experimental & Research data collections.

# 4.7.2 Openarchives.gr

Openarchives.gr is a "private" OAI harvester. It is the first and currently the only Greek harvester, collecting data from 41 resources in Greece and Cyprus.

# 4.7.3 Openaccess.gr

Openaccess.gr is an online platform, operated by the Greek National Documentation Centre (NDC), providing information on:



Figura 4.5. Openarchives.gr



Figura 4.6. Openaccess.gr

Table 4.8. Greek OAI-PMH digital collections in international harvesters & registries (April 2010)

			0	4				
No	Collection	OAI	BASE	Scientific commons	ROAR	Open DOAR		DRIVER
1	Anaktisi Institutional Repository of TEI of Western Macedonia		х	Х	Х			
2	Anemi Digital Library of Modern Greek Studies					×		
3	Aristotle University of Thessaloniki Document Server	×	×	×	×	×		×
4	Aristotle University of Thessaloniki, Department of Electrical and Computer Engineering: Repository		×		×			
~	Bulletin of the Geological Society of Greece	×						
9	Computational Systems and Software Engineering Laboratory - University of Macedonia				×			
7	Dexameni - University of Patras	×	х		Х			
8	DSpace at NTUA		х		х	×		
6	Educational Repository at the University of Patras	×	×		×	×		
10	Elocus - Institutional Repository of the University of Crete Library			x		×		
11	ESTIA - Harokopio University of Athens				×	×		
12	Eureka! Technological Educational Institute of Thessaloniki	х	х	Х	х	X		
13	Helios (National Hellenic Research Foundation)		х	Х	х	X		Х
14	Institute for Byzantine Research: Byzantina Symmeikta		×					
15	Kosmopolis - University of Patras	×	×		×	×	×	
16	Ktisis - Institutional Repository of the Technological University of Cyprus	×						×
17	Nemertes - University of Patras	×	×	x	×	×		
18	Pandektis - Major digital collections of Greek history and culture				×	X		
19	Pandemos				x			
20	Pleias - University of Patras	×	×		×			
21	Psepheda - Digital Library & Institutional Repository University of Macedonia	×	×	х	×	×		
22	University of Piraeus Library				×			
	Total	10	13	7	16	12	1	3

- Open access issues and latest trends.
- Open access infrastructure currently being developed by NDC.

Within this activities' framework, NDC has recently (April 2010) launched a blog on open access (http://www.openaccess.gr/blog/). The blog aims to promote the dialogue on open access, the adoption of open access policies in research organizations and the effective dissemination of research performed in Greece.

## 4.7.4 MICHAEL Hellas

MICHAEL Hellas is the Greek portal of the MICHAEL European project. It is actually a directory of digital collections from museums, archives, libraries and other cultural institutions from across Greece. It focuses almost exclusively to cultural content and currently provides information for 116 digital collections.

# 4.7.5 Greek digital resources in the global perspective

Like many others around the world, we strongly believe that one of the key issues for the success of the various OA initiatives is to get the full benefits that OA offers from a political as well as from a technological point of view.



Figura 4.7. MICHAEL Hellas

In simple words we think that every OA collection, especially in the case of small countries like Greece, "ought" to take advantage of the unique promotion and data search & retrieval opportunities that the various OA registries, OAI harvesters and aggregators offer now days.

The increase of access and use of the 'OA collections' from a global target group is a critical issue for the viability of each collection.

Taking this into account, one of our team's tasks is the continuous monitoring of the most important registries and harvesters worldwide, for registered Greek resources in order to get a view about the publicity and possible impact the Greek resources have in the global community. Such data from the most famous international registries and harvesters is presented in the following table 4.8 Greek OAI-PMH digital collections in international harvesters & registries.

## 4.8 Publishing bodies & Business models

The major players in OA publishing are currently the various scientific and professional societies with the academic and research institutions following in distance.

Private & traditional publishers are not yet strong players in e-publishing and even less in OA publications. Still it seems that they are falling into pace day after day. Important issues for that can be considered:

- Lack of cost analysis efforts and tools to compare e-publishing vs. traditional
  publishing models. Apart from the medical and law fields, scientific publications, either books or journals, account for a small income to publishing
  companies in general.
- A series of psychological (fear for the unknown and not to lose the few subscribers and the subsequent small income), technological and funding barriers.

Regarding OA publishing by private bodies and publishers, it is rather early to reach any secure conclusion for the future, as the Greek market is not really a significant one and further studies must be carried out in the near future on the OA business models that might be adopted by the Greek publishers.

Public funding and sponsoring are the main funding sources while membership and advertisements are also sources of income in the case of societies journals. On the other hand subscriptions, where applicable in OA journals, concern obviously the print version of the journal and they are not a considerable source of income.

## 4.9 FUTURE CHALLENGES

What is it expected in the near future in Greece can be summarized as follows:

- Spin off cases from previous projects.
- New opportunities from new projects:
  - "Digital convergence" EC and national funding.
  - Digitization, indexing and digital storage of old and current Greek journals.
  - More academic e-publishing initiatives. We expect to see important collaboration schemes between the academics and the private publishers and/or information services providers.
  - OA e-books projects initiated mainly by academic institutions.

Libraries' specific projects focused on University press OA publications, National OAI Harvester, CRIS tools, New federated search and retrieval tools, Web 2.0 applications etc.

• More e-publications from publishers mainly in the area of e-books. Adoption of new (to Greek situation/tradition) access and business models.

#### 4.10 Conclusions

Today 20 out of the 33 academic institutions in Greece operate an IR. The academic institutions that do not have an IR are either very small or recently established.

Most IRs host not only the scientific publications of the academic institutions but also journal archives, digitized special collections of the institution etc.

There are 29 e-journals most of them published either by academic institutions or by societies and in their majority the journals are OA.

Another 47 journals are published in both print and electronic format, and almost half of them provide their electronic version in a OA status. There are further 42 digital journal archives and again most of them are OA.

For all the progress of the last few years in OA publishing in Greece, there is still a long way to go in improving the provided services, the sustainability and preservation of the content and the cooperation of public and private sector. The small involvement of the private sector in these activities is due to the very small market and pilot projects and studies should be carried out in the future.

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