



Scholarly Publishing & Open Access in Greece

2009 Report

Hellenic Academic Libraries Link HEAL-Link

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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 e-journals, 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](#), which has been developed and is operated by the [Library & Information Center of the University of Patras](#) (see paragraph 7.1)
- [National Book Center of Greece \(EKEBI\)](#),
- [openarchives.gr](#) OAI harvester (see paragraph 7.2)
- [ISI Web of Knowledge](#)
- [Scopus](#)
- [Ulrich's Web](#)

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.

2.1 Book publishing

According to the National Book Center of Greece (EKEBI) data (Table 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.

Table 1. Book titles production per year, subject and language							
Subject	2002	2003	2004	2005	2006	2007	2008
Humanities*	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 **	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 ***	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

** Includes law, political & economical sciences, education*

*** Includes medicine*

**** Travel guide, maps, gastronomy, practical guides etc.*

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, with more publishers and retailers involved in this business. A detailed view of current e-books market in Greece is presented in Table 2 below.

Beyond these cases all other initiatives concern digitized old historical books as part of wider digital collections with multiple types of material (see paragraph **Σφάλμα! Το αρχείο προέλευσης της αναφοράς δεν βρέθηκε.** below).

Table 2. E-books market in Greece				
No	Title	URL	Type of Provider	Business Model
1	Compupress: e-Alexandria	http://www.e-alexandria.gr/	Retailer	OA
2	eBookShop platform	http://www.e-bookshop.gr/	Retailer	Commercial
3	Empiria Publications	through retailer (Publisher's site: http://www.brainfood.gr/empiria.php)	Publisher	Commercial
4	e-na	http://www.e-na.com/	Retailer	Commercial
5	Entos Publications	through retailer (Publisher's site: http://www.defacto.gr/)	Publisher	Commercial
6	Govostis Publications	through retailer (Publisher's site: http://www.govostis.gr)	Publisher	Commercial
7	Iolkos Publications	http://www.iolcos.gr/component/option,com_virtuemart/page,shop.browse/category_id,12/Itemid,53/	Publisher	Commercial
8	Kastaniotis Publications	http://www.kastaniotis.com/multimedia/ebooks/	Publisher	Commercial
9	Kedros Publications	http://www.kedros.gr/main.php?cPath=773	Publisher	Combined
10	Livanis Publishing	http://www.livanisatschool.gr/	Publisher	Commercial
11	MyEBooks	http://www.myebooks.gr/	Retailer	Commercial
12	Oxy	through retailer (Publisher's site: http://www.brainfood.gr/oxy.php/)	Publisher	Commercial
13	Papadopoulos Publications	http://www.picturebooks.gr/el/list_online.asp	Publisher	Commercial
14	Psichogios Publications	http://www.psichogios.gr/ebooks.asp	Publisher	Commercial
15	Sakkoulas Publications	http://www.poinikachronika.gr/	Publisher	Commercial
16	Sideris Publications	through retailer (Publisher's site: http://www.isideris.gr)	Publisher	Commercial

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 3 below we present an overview of these titles.

In Table 4 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.

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. 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 5 below)

Table 3. Greek "scientific" journals overview			
Subject	Total titles	Peer review titles	Titles in Digital format (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
Γενικό άθροισμα	328	163	118

Table 4. Peer review journals – Publishing bodies						
Subject	Peer review titles	Types of Publishing Bodies				
		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
Γενικό άθροισμα	163	26	6	31	17	83

Table 5. Articles by authors affiliated with Greece in International Peer Review Journals										
Source	Articles / Year									
Source: WoS, 27/4/2010	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	6293	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	13.085	13.877	13.359	12.289	10.720	9.808	8.419	7.755	7.061	6.560
Source: Scopus, 27/4/2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
TOTAL	15.246	14.584	13.830	13.072	11.173	9.757	8.170	7.142	6.548	6.194

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](#)¹, [IATROTEK](#)² κλπ)
- The first digital collection³, (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](#)⁴
- Pilot version of the [Directory of Greek Digital Resources](#)⁵
- The University of Patras becomes the 4th Greek Signatory of the Berlin Declaration (2009) after University of Macedonia (2006) and Alexander Technological Educational Institute of Thessaloniki (2007)

¹ <http://argo.ekt.gr/>

² <http://www.iatrotek.org/>

³ <http://dlib.lib.uoc.gr/>

⁴ <http://www.openarchives.gr/>

⁵ http://www.lis.upatras.gr/Libworld/gr_resources_EL.php

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 6), while 73 of them are clearly stated as peer review journals. Exactly a year months 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 5-8 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 ($\approx 40\%$) 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 paragraph 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:

- 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

Table 6. Online Full Text Publication Types & Subjects																
Subject	Online Full Text Titles				Publication Types											
					e-Journals				Journals in Print & Web				Journal Digital Archives			
	Total		Peer Review		Total		Peer Review		Total		Peer Review		Total		Peer Review	
	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	7	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	6	8	6	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	3	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	6	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	6	6
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 7. Online Full Text Publication Types & Publishing Body Types																					
Publication Type	Publishing Body Types																				Total
	Academics				National – Government				Private				Research				Societies				
	Total		Peer Review		Total		Peer Review		Total		Peer Review		Total		Peer Review		Total		Peer Review		
	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	
e-journals	11	11	11	11					4	3	3	3	4	4	4	4	10	10	10	10	29
Print & Web	3	3	3	3	1	1	1	1	22	5	7	4	4	3	4	3	17	10	16	10	47
Archives	3	2	3	2	3	3	3	3	11	10	2	2	3	2	3	2	22	17	19	15	42
Total	17	16	17	16	4	4	4	4	37	18	12	9	11	9	11	9	49	37	45	35	118

Table 8. Online Full Text Journals Subjects & Publishing Bodies Types																					
Subject	Publishing Body Types																				Total
	Academics				National – Government				Private				Research				Societies				
	Total		Peer Review		Total		Peer Review		Total		Peer Review		Total		Peer Review		Total		Peer Review		
	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	Total	OA	
Agriculture									1	0											1
Appl. 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	6	5	6	5					1	1	1	1					1		1		8
Education					3	3	3	3	1	1							1	1	1	1	5
Environ, Sciences	1	1	1	1					1	1	1	1	1	1	1	1					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					6
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		1		1
Total	17	16	17	16	4	4	4	4	37	18	12	9	11	9	11	9	49	37	45	35	118

Table 9. Greek OA e-journals in DOAJ*

No	Journal Title	Publishing Body	URL
1	Biology of Exercise	University of Pelopponisos	http://www.biologyofexercise.com/
2	Cancer Therapy	Cancer Therapy	http://www.cancer-therapy.org/
3	e-Journal of Science & Technology, (e-JST)	Technological Educational Institute of Athens	http://e-jst.teiath.gr/
4	e-Perimetron	Editorial Board	http://www.e-perimetron.org/
5	Gastric & Breast Cancer	University of Ioannina	http://www.gastricbreastcancer.com/
6	Hellenic Open University Journal of Informatics	Hellenic Open University	http://nefeli.dsmc.eap.gr/ojs-2.1.1/index.php/HOUJOI/index
7	Intellectum	Editorial Board	http://www.intellectum.org/
8	Journal of Biological Research (JBR)	Aristotle University of Thessalonica	http://web.auth.gr/jbr/
9	Journal of Engineering Science and Technology Review	Technological Educational Institute of Kavala	http://www.jestr.org/
10	Mediterranean Marine Science Journal	Hellenic Marine Research Center	http://www.medit-mar-sc.net/
11	Tourismos	Aegean University	http://www.chios.aegean.gr/tourism/journal.htm
12	Inquiries in Sport & Physical Education	Hellenic Academy of Physical Education	http://www.hape.gr/emag_g.asp
13	Archives of hellenic medicine	Athens Medical Society	http://www.mednet.gr/archives
14	Hellenic journal of cardiology	Hellenic Cardiological Society	http://www.helleniccardiol.com/
15	Hellenic Orthodontic review	Greek Orthodontic Society	http://www.gortho.gr/hor
16	Byzantina Symmeikta	Institute for Byzantine Research	http://www.byzsym.org/
17	Tekmeria	Institute of Greek and Roman Antiquity	http://www.tekmeria.org/
18	To Vima tou Asklipiou	Technological Educational Institute of Athens	http://www.vima-asklipiou.gr/
19	Choregia	University of Pelopponisos	http://www.choregia.org/
20	International Journal of Economic Sciences and Applied Research	Technological Educational Institute of Kavala	http://www.ijesar.org/
21	Journal of Musculoskeletal and Neuronal Interactions	International Society of Musculoskeletal and Neuronal Interactions	http://www.ismni.org/jmni/index.htm

* All peer review titles

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 Table 10).

Table 10. OA Digital Collections with Books *		
No	Collection Title	Publishing Body
1	Aqioritiki Mnimi	Holly Monastery of Simonos Petras, Agio Oros
2	ATHENA – Proceedings of the Academy of Athens	National Documentation Center
3	Anacharsis	University of Crete
4	Greek Revolution Archives 1821-1832	Greek Parliament
5	Athens School of Fine Arts – Digital Library	Athens School of Fine Arts
6	National Archive of PhD Theses	National Documentation Center
7	Greek Digital Bibliography 15th-20th	University of Crete
8	Ellinomimon	University of Athens
9	Greek Language Thesaurus	Greek Language Thesaurus
10	National Technical University of Athens – Historical Library	National Technical University of Athens
11	Historical Archive of the University of Athens	University of Athens
12	Catalogues of Manuscript Codes	National Library of Greece
13	Marcos Mousouros	University of Crete
14	Neoellinistis	University of Crete
15	Digital Collections of the Holly Metropolis of Thessalonica	Holly Metropolis of Thessalonica
16	Collections of the Foundation for Aimos Peninsula Studies	Foundation for Aimos Peninsula Studies
17	Ioannis Trikoqlou Collection	Aristotle University of Thessaloniki
18	Rare Books Collection of the History & Documentation Center of Volos	Rare Books Collection of the History & Documentation Center of Volos
19	Digital Library of Greek Mathematical Society	Library of Greek Mathematical Society
20	Digital Library of the Research Laboratory of Greek Philosophy	University of Ioannina
21	Rare Books Collection of the University of Ioannina	University of Ioannina
22	Digital Archive of the Holly Metropolis of Arta	Holly Metropolis of Arta
23	Digital Archive of the Holly Metropolis of Ioannina	Holly Metropolis of Ioannina
24	Digital Library of Leimonos Monastery	Leimonos Monastery

* Source: *Directory of Greek Digital Resources (April 2010)*

6 Repositories & Digital Collections

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 2 more run a non OAI-PMH compliant IR, based on custom/commercial applications and finally 2 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.

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.

Table 11. Greek Institutional Repositories *

No	Title	Organization	Content	Software	Items**
1	Bibliotheca	Technological Educational Institute of Crete	Grey Literature	-	3000
2	E-Locus	University of Crete	Grey Literature, Archives	Keystone	3409
3	EPRINTS server of the Computational Systems & Software Engineering Laboratory	University of Macedonia	Grey Literature	Eprints	45
4	Anaktisi	Technological Educational Institute of Western Macedonia	Grey Literature	Eprints	114
5	Grey Literature of the Aegean University	Aegean University	Grey Literature	Custom/Commercial	-***
6	AUTH Digital Collections	Aristotle University of Thessaloniki	Grey Literature, Archives, Special Collections	CDS Invenio	113627
7	Estia - Digital Repository of Harokopio University	Harokopio University of Athens	Grey Literature	Dspace	950
8	Eureka!	Technological Educational Institute of Thessaloniki	Grey Literature, Archives, Journals Articles	Dspace	1540
9	Helios: Repository of the National Hellenic Research Foundation	National Hellenic Research Foundation	Grey Literature, Archives, Journals Articles, Books	Dspace	3903
10	Psepheda	University of Macedonia	Grey Literature, Archives, Journals Articles, Special Collections	Dspace	11889
11	DSpace at NTUA	National Technical University of Athens	Grey Literature, Archives, Journals Articles, Special Collections	Dspace	2729
12	Dpt of Electrical & Computer Engineering: Repository	Aristotle University of Thessaloniki	Grey Literature	Eprints	392
13	Digital Repository of Agricultural University of Athens	Agricultural University of Athens	Grey Literature	Dspace	56
14	Ktisis - Institutional Repository	Technological University of Cyprus	Grey Literature	Dspace	2153
15	Nemertes - Institutional Repository	University of Patras	Grey Literature	Dspace	2528
16	Pandemos	Panteion University of Athens	Grey Literature, Archives, Journals Articles	Dspace	3205
17	Grey Literature of Democritus University of Thrace	Democritus University of Thrace	Grey Literature	Dienst	-***
18	Grey Literature of Technical University of Crete	Technical University of Crete	Grey Literature	Dienst	-***
19	Digital Library of the University of Piraeus	University of Piraeus	Grey Literature, Archives, Journals Articles	Dspace	3708
20	Digital Library of the University of Ioannina	University of Ioannina	Grey Literature, Archives, Journals Articles	Dspace	3902
21	Pergamos Digital Library	University of Athens	Grey Literature, Archives, Special Collections	Fedora / Pergamos	117528
Total Items					274678

* Source: *Directory of Greek Digital Resources (April 2010)*

** Statistics Source: openarchives.gr (April 2010) - *** Not possible to gather data on time for the purposes of this report – Not OAI-PMH sources

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 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 6.1), among these registered resources there is a significant number of OAI compliant digital collections (Table 12) 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 Table 13.

Table 12. OAI-PMH compliant Digital Collections *					
No	Title	Organization	Content	Software	Items**
1	Anemi Digital Library of Modern Greek Studies	University of Crete	Digital Collections	Keystone	15061
2	Annals of Gastroenterology	Hellenic Society of Gastroenterology	E-Journal	OJS	240
3	Archives of the American Farm School of Thessaloniki	American Farm School of Thessaloniki	Archives	Dspace	100
4	Argolikos Archival Library of History and Culture	Argolikos Archival Library of History and Culture	Archives	WordPress	1061
5	Byzantina Symmeikta	Institute for Byzantine Research	E-Journal	OJS	271
6	Daniilida	University of Patras	Bibliographies, Archives, Books, Journal Articles	OJS	2951
7	Dexameni	University of Patras	Journals Archive	OJS	488
8	Digital Library of Leimonos Monastery	Leimonos Monastery	Archives	Custom	133
9	DIGMA - Digital Greek Music Archive	Music Library of Greece "Lilian Voudouri"	Archives, Digital Collections	Custom	2796
10	Hellenic Open University Journal of Informatics	Hellenic Open University	E-Journal	OJS	11
11	Historical Review, The	Institute for Neohellenic Research	E-Journal	OJS	69
12	Journals Articles Index	Technological Educational Institute of Serres	Database	OJS	2302
13	Kosmopolis	University of Patras	Journals Archive	OJS	50576
14	Lyceum Club of Greek Women Digital Collection	Lyceum Club of Greek Women	Digital Collections	Custom	4100
15	Pandektis: Digital Thesaurus of Primary Sources for Greeek History & Culture	National Hellenic Research Foundation	Archives	Dspace	35228
16	Pleias	University of Patras	Journals Archive	OJS	66346
17	Research Notebooks	Institute for Neohellenic Research	E-Journal	OJS	69
18	Review of Economic Sciences	Technological Educational Institute of Epirus	Journal Archive	Dspace	130
19	SCHERIA Digital Library	Technical Chamber of Greece-Corfu Dpt.	Repository	Dspace	92
20	Spoudai	University of Pireaus	Journal Archive	Dspace	630
21	Tekmeria	Institute of Greek and Roman Antiquity	E-Journal	OJS	107
22	Theofrastos Digital Library	Aristotle University of Thessaloniki	Journals Archive	OJS	3333
Total items					186094

* Source: *Directory of Greek Digital Resources (April 2010)*

** Statistics Source: openarchives.gr (April 2010)

Table 13. Non OAI-PMH Digital Collections*		
No	Title	Organization
1	e-Alexandria	Compupress S.A.
2	e-phemeris: Newspapers and Magazines	National Library of Greece
3	STUDIO - parallel circuit: Digital Colelctions	STUDIO - parallel circuit
4	Athos Memory	Holy Monastery of Simonos Petras
5	ATHENA - Proceedings of the Academy of Athens	National Documentation Center
6	Anna Komnene	European Center of Byzantine and Post-Byzantine Monuments
7	Archives of Anatomic Pathology	Hellenic Society of Anatomic Pathology
8	Archives of the Greek Revolution	Greek Parliament
9	Rare Books Collection of the History & Documentation Center of Volos	Rare Books Collection of the History & Documentation Center of Volos
10	Kavafis Archive	Center for Neo-Hellenic Studies
11	Council of Historical Memory of the Liberation Struggle of EOKA 1955-1959 (SIMAE)	University of Cyprus
12	Digital Library of Athens School of Fine Arts	Athens School of Fine Arts
13	ikelea Municipal Library	Bikelea Municipal Library
14	National Gallery of Greece	National Gallery of Greece
15	Hellenic Ph.D. Dissertations Thesis	National Documentation Center
16	Ellinomnimon	University of Athens
17	Proceedings of the Philosophical Schools of the University of Athens and the University of Thessaloniki 1925-1997	National Library of Greece
18	Digital Library of the John S. Latsis Public Benefit Foundation	John S. Latsis Public Benefit Foundation
19	Greek Language Thesaurus	Greek Language Thesaurus
20	Thrace, the land of Orpheus	Democritus University Of Thrace
21	The Historical and Palaeographical Archive	Cultural Foundation of the National Bank of Greece
22	Catalogues of Manuscript Codes	National Library of Greece
23	Refugees' Ark	Cultural Center of Thrace
24	Koitida	Municipal of Nafplion
25	Critics of Theatre & Music	Society of Greek Theatre and Music Critics
26	Press Museum of Patras	Association of Peloponnisos, Epirus and Ionian Islands Newspaper Editors
27	Audiovisual Archive of the Greek Radio-Television	Greek Radio-Television (ERT)
28	Proceedings of the Hellenic Academic Libraries Conferences	University of Cyprus
29	Gallery of Athens School of Fine Arts	Athens School of Fine Arts
30	E. Averof Gallery	E. Averof-Tositsa Foundation
31	Digital Collections of the Holly Metropolis of Thessaloniki	Holly Metropolis of Thessaloniki
32	Cultrural Deposit of the State Conservatory of Thessaloniki	State Conservatory of Thessaloniki
33	Collections of the Foundation for Aimos Peninsula Studies	Foundation for Aimos Peninsula Studies
34	Digital Collections of Center for Greek	Center for Greek Theater Research and Studies

	Theater Research and Studies	
35	Digital Collections of State Museum of Modern Art	State Museum of Modern Art
36	Digital Collection of Macedonian Museum of Modern Art	Macedonian Museum of Modern Art
37	Collection of Museum of Cycladic Art	Museum of Cycladic Art
38	Collections of Benaki Museum	Benaki Museum
39	Collections of Museum of the City of Athens	Museum of the City of Athens
40	Collection of Giannis Tsarouxis Foundation	Giannis Tsarouxis Foundation
41	Collection of Arts Life -ELIA	Hellenic Literature & Historical Archive (ELIA)
42	Card Postal Collection - ELIA	Hellenic Literature & Historical Archive (ELIA)
43	Press Collection - ELIA	Hellenic Literature & Historical Archive (ELIA)
44	Photographic Archive - ELIA	Hellenic Literature & Historical Archive (ELIA)
45	Photographic Archive of ASKI	Archives of Temporary Social History (ASKI)
46	Digital Library of the Greek Mathematical Society	Greek Mathematical Society
47	Digital Library of the Research Laboratory of Greek Philosophy	University of Ioannina
48	Historical Manuscripts Digital Library	Vikelea Municipal Library of Herakleion
49	Digital Library of the Technical Chambers of Greece Library	Technical Chambers of Greece
50	Digital Crete: Archaeological Atlas of Crete	Foundation for Research and Technology
51	Digital Crete: Venecian Period - Sculpture A	Foundation for Research and Technology (ITE)
52	Digital Crete: Venecian Period - Sculpture B	Foundation for Research and Technology (ITE)
53	Digital Library of Glinos Institution	Glinos Institution
54	Digital Collection of Photography Museum of Thessaloniki	Photography Museum of Thessaloniki
55	Digital Maps	University of the Aegean
56	Digital Deposit of the Greek Cinemateque and Cinema Museum	Greek Film Archive Foundation
57	Digital Archive of the Greek democratic Army: the Greek Civil War (1946-1949)	Archives of Temporary Social History (ASKI)
58	Digital Archive of National Opera of Greece	National Opera of Greece
59	Eleftherios Venizelos Digital Archive	National Research Center Eleftherios Venizelos
60	Digital Archive of the Holly Metropolis of Arta	Holly Metropolis of Arta
61	Digital Archive of the Holly Metropolis of Ioannina	Holly Metropolis of Ioannina
62	Digital Archive of Michalis Papagiannakis	Archives of Temporary Social History (ASKI)
63	Digital Archives of ASKI	Archives of Temporary Social History (ASKI)
64	Digital Archive of Greek Music	Association of "Friends of Music"
65	Digital Byzantine Music - Konstantinos Prigos Archive	Church of Greece

* Source: *Directory of Greek Digital Resources (April 2010)*

7 Harvesters, Registries & related initiatives

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
- 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
 - o Library catalogs, Bibliographies, Journal articles
- Digital Collections
 - o journals archives, books, texts & articles collections, images & multimedia collections
- Institutional Repositories
 - o Grey Literature, Publications, Educational material, Archives
- E-journals (fully e-published)
- Experimental & Research data collections

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.

7.3 *Openaccess.gr*

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

- 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.

7.4 MICHAEL Hellas

[MICAHEL 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.

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.

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 14.

No	Collection	OAI ster	BASE	Scientific Commons	ROAR	Open DOAR	Europeana	DRIVER
1	Anaktisi Institutional Repository of TEI of Western Macedonia		x	x	x			
2	Anemi Digital Library of Modern Greek Studies					x		
3	Aristotle University of Thessaloniki Document Server	x	x	x	x	x		x
4	Aristotle University of Thessaloniki, Department of Electrical and Computer Engineering: Repository		x		x			
5	Bulletin of the Geological Society of Greece	x						
6	Computational Systems and Software Engineering Laboratory - University of Macedonia				x			

7	Dexameni - University of Patras	x	x		x			
8	DSpace at NTUA		x		x	x		
9	Educational Repository at the University of Patras	x	x		x	x		
10	Elocus - Institutional Repository of the University of Crete Library			x		x		
11	ESTIA - Harokopio University of Athens				x	x		
12	Eureka! Technological Educational Institute of Thessaloniki	x	x	x	x	x		
13	Helios (National Hellenic Research Foundation)		x	x	x	x		x
14	Institute for Byzantine Research: Byzantina Symmeikta		x					
15	Kosmopolis - University of Patras	x	x		x	x	x	
16	Ktisis - Institutional Repository of the Technological University of Cyprus	x						x
17	Nemertes - University of Patras	x	x	x	x	x		
18	Pandektis - Major digital collections of Greek history and culture				x	x		
19	Pandemos				x			
20	Pleias - University of Patras	x	x		x			
21	Psepheda - Digital Library & Institutional Repository University of Macedonia	x	x	x	x	x		
22	University of Piraeus Library				x			
	Total	10	13	7	16	12	1	3

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

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
 - o Digitization, Indexing and Digital Storage of old and current Greek journals
 - o More academic e-publishing initiatives. We expect to see important collaboration schemes between the academics and the private publishers and/or information services providers.
 - o 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.

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.