Digital Scholarly Publishing and Archiving Services by Academic Libraries: The case study of University of Patras
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Abstract: During the last years, the dramatic changes in electronic publishing landscape have created new roles and changed the traditional ones. Libraries nowadays have capitalized their experience and knowledge in information technology and electronic publishing to undertake such activities, while they spearhead the campaign for Open Access spreading within academic communities.

The Library & Information Center (LIC) of the University of Patras (UoP), Greece, has been playing an active role in promoting Open Access in Greece. Since 2007, LIC has been experimenting with OA publishing practices and tools within the framework of various R&D projects. Two out of the major results of these efforts are:
- the “Pasithee” e-publishing platform
- the “Dexamene” digital archive for Greek scholarly journals
Both platforms are based on OJS-Open Journal Systems e-publishing software. The two installations are appropriately modified to meet LIC’s publishing and archiving requirements respectively. Currently two journals are being hosted in each platform, all four belonging in the Humanities, while LIC is in negotiations with more publishers and editorial teams to host their journals in LIC’s services accordingly.

In this presentation we focus on the:
- technical and managerial key issues of the development and operation phases,
- services and procedures,
- adopted business model,
- technological, procedural and legal issues and problems that were raised from working together with publishers, editors and authors, and
- future plans for improving and upgrading our e-publishing services in an integrated institutional platform to cover all kinds of publications and data types (monographs, conference proceedings, teaching material, bulletins, magazines etc.)

The paper concludes with a succinct presentation of the Directory of Greek Digital Resources, a pilot infrastructure developed by LIC, which indexes and presents digital publishing initiatives in Greece and aims to become a formal registry for Greek scientific resources in digital format.

Keywords: electronic publishing, academic libraries, Greece, Open Access

1. Introduction
Libraries were always considered to be the custodians of knowledge by preserving and giving access to the media of each age, either papyri, codices, or books. The late thirty years of electronic and digital technology’s rapid development have created new roles and challenges for libraries. As organizations that heavily rely on the ‘technology’ of each age, the social conditions and the economic parameters, libraries were always trying to find new means to better serve their users. This is where the motives of libraries for transformation stand, as they are organizations that closely work with their community and therefore many of their achievements are based on their needs. Libraries often have been criticized in the past for taking part in initiatives, such as developing institutional repositories or participating in institutional e-learning programs. However they have managed to deal with this ‘identity crisis’ and their activity in these fields proved fruitful, mainly due to the perception of library managers that these new roles are an “expansion rather than contraction” [Jöttkandt, 2010].

Nowadays the library’s identity crisis occurs in a wider environment of crisis. The last two years the economic downturn is piling the pressure of instability and budget
shrinking. Libraries see their budgets decreasing and suffer from further reductions each year, while at the same time the amount of scholarly information increases and more requests to expand the collections are being submitted and considered. It is widely known that journal budgets represent the lion’s share for collection development budget. According to a report of LISU and Loughborough University journal prices in biomedical sciences increased from 42% to 104%, while in the social sciences from 47% to 140% [White & Creaser, 2007]. The study investigated the increase per journal title, per page, percentage of Impact Factor coverage and per point in the Impact Factor during the years 2000-2006. A recent statistics study by ARL [2009] notes that the expenditures among 110 members of the Association have increased from $49,497,141 in 1997-1998 to $554,637,844 in 2007-2008. While this is subject to yearly variations it signifies an increase of 1.020%. The recent library economics landscape shows that despite ‘freezes’ or slight variations in journal prices for 2010 [Henderson & Bosch, 2010], libraries still face significant problems due to their own overall budget reductions and the new titles entering the subscriptions ‘arena’.

The environment however does not only impose challenges to the libraries, but also creates new opportunities, which are based on technologies and the related interventions. Technological advancements and political issues that have emerged have helped libraries to reinforce their relationships with scholars and offer services that address tasks covering the whole range of stages of the information lifecycle than the ones at the end, such as retrieval. The fields of assistance in creating, disseminating and using information are still open and recent studies have shown that librarians are eager to explore new roles for their profession and the service of their community [Brown, Griffiths, Rascoff & Guthrie, 2007]. On the other side, scholars, who are an integral part of these tasks, need the support from a reliable partner that would be willing to share know-how and adaptable services. Thus, through long-term cooperation and service libraries have become willing to open and understand the main considerations of scholars, among which stands their anxiety for an effective and wide impact of their research. Scholars understand that current models of publishing are limiting their readership, but despite the contrary recent evidence, they seem reluctant to move to Open Access mode due to the impact of their work. However a significant part of scholars are aware of the benefits and drawbacks of Open Access and seriously consider their reaction towards such options [SAGE, 2009].

In the field of electronic publishing, several libraries undertake or participate in related initiatives as a response to the overall budget crisis and the need to satisfy specific classes’ requirements. The stage is set when one takes into account the library budget reductions, the journal prices increase and the alternatives present; all is needed is a motive. The present paper exhibits succinctly the recently inaugurated e-publishing program of an academic library, namely Library and Information Center of the University of Patras (LIC). The following section holds two subsections; in the first important case studies from the library domain that work in an exemplary fashion are presented, and in the second the Greek scientific publishing landscape is outlined. Section 3 presents the case of LIC by listing the conditions in which the e-publishing program takes place, the activities, the implementation details and the outputs. The last section is dedicated to discussing the effectiveness of the e-publishing program and the future challenges.
2. Background

2.1. Libraries as Publishers

There are several examples of publishing activity from library organizations. Usually many of these initiatives are being carried out by partnerships with Information Technology Centers and/or University Presses. The organizational schemes in which they operate are often idiosyncratic. There are instances where the publishing initiative is subsumed to another organizational scheme, like the general publishing vehicle of a University, which may include institutional repository activities, like in the case of the Australian UTSeScholarship, or even to the library itself, such as in the example of Linköping University Electronic Press.

Project Euclid, funded by the Andrew W. Mellon Foundation and operated by Cornell University Library and Duke University Press, is a digital library of electronic journals on the disciplines of mathematics and statistics. According to the project’s webpage “Project Euclid is designed to address the unique needs of low-cost independent and society journals”, seeking thus a balance between efficient economic management, scientific integrity and wide publication. Project Euclid is based on the DPubS (Digital Publishing System) platform, an open-source software system. DPubS was developed on the Dienst system, which was the responsibility of Cornell's Computer Science Department and Cornell University Library, while in its current form DPubS is supported by Penn State University Libraries and Press. Project Euclid stands as an example of reasonable responsibility sharing between peer partners for the effective publishing of high quality journals, while respecting policies of individual societies.

The Scholarly Publishing Office of the University of Michigan Library is an interdisciplinary publishing service that focuses mainly on the humanities and social sciences. One of the most important journals in the scholarly communication field is published under the auspices of the SPO, namely Journal of Electronic Publishing, while other publications of the program range from encyclopedias to archival material. The office provides (a) hosting services for non-profit academic organizations that are interested in publishing, (b) infrastructure for an online delivery system that secures accessibility and retrieval, and (c) a selection of statistical indicators. According to the official statement SPO is seeking “to foster a better economic model for campus publishing, to support local control of intellectual assets, and to create highly functional scholarly resources”. The publishing program is also framed by a wide set of services to support alternative dissemination channels, such as print-on-demand services for selected items from the collections of the University of Michigan digital library. Once again the Office provides the option to interested parties to follow several access policies, like open access or pay-per-view for non subscribers.

SPO has extended its publishing model, by partnering with other initiatives to spread Open Access. Open Humanities Press, an international initiative that promotes electronic publishing for journals and books, is exploiting the infrastructure and experience capitals of SPO and attempts to stimulate scholars, editorial teams and

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1 http://utsescholarship.lib.uts.edu.au
2 http://www.ep.liu.se
3 http://projecteuclid.org
4 http://www.lib.umich.edu/spo
5 http://openhumanitiespress.org
research societies to participate in a venture for facilitating editorial work. The approach is fully Open Access with no limitations or charges.

The previous examples constitute long established and solid endeavors, with different business plans. For instance, Project Euclid and SPO grant tiered access rights, ranging from fully open to subscription based access, while OHP is providing its services free of any charge, either to the authors, or to the users. Therefore the publishing policies vary according to contextual parameters that often are based on the long-term traditions of the institutions and the scientific societies.

2.2. Scientific E-Publishing in Greece

Scholarly publishing in Greece deals mainly with printed format. According to the National Book Center of Greece (EKEBI) data [EKEBI, 2009], the Greek book market is still on a complete print environment and is mainly oriented to humanities and literature, as titles in natural and applied sciences represent a small proportion of the total production and actually seem to have a declining tendency. 328 journals have been recorded [Georgiou & Papadatou, 2009] as scholarly titles or titles of a considerable scientific interest and importance to academics and researchers, 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. Finally only 163 of these titles adopt a clearly stated peer review policy in the article submission, editing and publishing processes.

According to the same report, there has been a significant progress regarding e-journals publishing initiatives in the last two years, while activities in the e-book market are considered rather insignificant, although small increasing trends can be observed.

Out of a total of 118 journal titles with online full text, 84 are providing their contents through OA, while the vast majority of the latter (73 titles) is explicitly identified as peer review journals.

![Figure 1: Greek Scientific Journals Overview](image)

Almost 40% of these 118 journal 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 of which all but one are OA journals.
The majority (~40%) of these journals are published in the field of medicine (mainly by related scientific societies), with journals in the area of natural and 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 hold a significant share of the total online market (23%), although they are clearly oriented to ‘print & web’ publications.

3. The Case of Library and Information Center, University of Patras

The current section presents the case of Library and Information Center (LIC) of the University of Patras. LIC is one of the pioneer libraries in Greece in the adoption of OA, taking actions itself or coordinating the institutional planning for OA. This has been translated into numerous ways: LIC is a Berlin Declaration signatory, a SCOAP3 Initiative supporter and a BIOMED Central Supporter. During the last years LIC has cooperated with several organizations, such as Schools and Departments of the University of Patras, local information organizations, like the Municipal Library of Patras, non-governmental agencies, such as the Hellenic Literature and History Archive, and governmental agencies, like the Library of the Greek Parliament, in order to produce high-quality digital collections. These collections are outlined in the following subsections.

3.1. Context of Activity

In the last decade LIC developed a series of initiatives in the fields of e-archiving, e-publishing and scholarly communication. Most of the collections are deliverables of the EU co-funded R&D project ‘Telephaessa’. ‘Telephaessa’ extended over a six year period for the first phase (2000-2006), while a supplemental period for years 2007-2008 was granted in order to further extend some successful activities. Part of the objectives of ‘Telephaessa’ was:

“The acquisition of technical expertise and infrastructure on issues of digitization and digital service delivery to [LIC’s] users”

and

“The active participation in initiatives for the enrichment of digital collections in the Greek language in national and international level”.

It was firmly decided by LIC to develop the collections and services with an ‘open’ perspective and to encourage participation in cooperation schemes with other local and regional state services. Instances of ‘openness’ were considered to be (a) the prioritization of open source software, (b) the pursue of means to effectively facilitate widespread distribution open source in a national level, (c) the adoption and reuse of ‘open’ constructs, and (d) the adoption and dissemination of OA policies.
The R&D project of LIC resulted in a set of collections that can be classified in three main categories according to their aims and scope:

- **E-Archiving** collections that host, preserve and disseminate old literature periodicals. Three collections are included in this category, namely ‘Kosmopolis’, ‘Pleias’ and ‘Danielis’. ‘Danielis’ is an instance of the desired outcome regarding participation in local and regional cooperation schemes, as it was developed in cooperation with the Municipal Library of Patras, aiming to cover a significant gap in the field of digital resources for the local history and culture through the digitization of journals that were published in Patras during the 19th/20th century.

- **E-Publishing** collections that support the publication of scientific journals though digital channels. Two collections are included in this category, namely ‘Dexamene’ and ‘Pasithee’, which are also the object of section 3.3.

- **Scholarly communication** and support services that host, preserve and disseminate the scholarly and research outcome through the employment of UoPatras’ institutional repository, ‘Nemertes’, and UoPatras’ Current Research Information System (the latter being still in preparation stages).

Figure 2 presents schematically the outputs of the ‘Telephaessa’ project. This figure also presents the activities taken by LIC on the communal level, meaning the sum of all actions that support the dissemination of systems and collections (including translation services for Open Journal System and Open Conference System in Greek, support for these systems’ implementation, and installation and operation of the Wiki for the Greek DSpace community) and gather essential information for the current state of digital initiatives in Greece through the Directory of Greek Digital Resources (a brief presentation of the later follows).

![Figure 2: Activities of LIC towards Open Access on Institutional and Communal levels.](image)

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The activity of LIC was encouraged by the lack of a proper digitization center and a publishing house within the University. To conclude, the motive for LIC to step on the e-publishing stage was not based only on the need to respond to the wide financial crisis, as it was highlighted in the introduction of the paper, but also on the need to assist scholar communities to find reliable and effective alternatives to publish in a world of emerging technologies.

3.2. Implementation Details

3.2.1. Business Plan
The aim of LIC’s e-publishing program was primarily to support academics or scholarly groups within the UoPatras to publish their research outputs through scientific journals, but later it was extended to address also demands for storage and preservation of back-files of currently printed scientific journals.

LIC however does not adopt an ‘aggressive’ policy to address the scholars’ needs, but rather works by encouraging a “volunteer collective” approach [Jöttkandt, Willinsky & Kimball, 2009]. Despite the thorough work on recording scientific activity, there are still margins where scientific communication cells reside. Thus LIC has issued an open call to interested parties to discuss possibilities for e-publishing, highlighting the benefits of lifting many cost-related weights and undertaking the responsibility for secure and reliable access. The call is open in many aspects, as there are - almost - no strings attached to the policy behind it. The only prerequisites are (a) to select an OA mode of publication and (b) to safeguard the scientific integrity by following proper editorial processes and peer-review.

On the other side, LIC offers a range of services that despite their limitations have been characterized appealing, effective and viable for the Greek standards. Due to limitations in resources and expertise, the business plan predicts some things that the library can do and some things that can’t. Among the tasks that LIC can be responsible of is: (a) to digitize the material and import metadata, (b) to provide and guarantee access, (c) to provide infrastructures and software solutions, (d) to preserve the content, and (e) to instruct the Editorial Boards on the administration of the system and the facilitation of the processes. LIC does not interfere in any stage with the reviewing process, the copyediting, the parallel printing, the distribution and the subscription management, where applicable and only for printed versions. Finally, LIC can provide consultation and assistance in the marketing strategy for promoting the journal and widening its contribution base, but this option is subject to the will and needs of the Editors.

3.2.2. Technological Plan
The e-publishing platform is based on Open Journals System (OJS), an electronic journal management system that is developed by the Canadian federal-funded Public Knowledge Project. As a system that takes care of the whole editorial and publishing processes, OJS currently offers assistance in every stage, from the early steps of submission to the final details of publication and access. LIC, as mentioned above, has translated OJS, together with a second software of the PKP platform, Open Conference System, in Greek and has distributed it to interested libraries to set-up and develop their own journal collections. In a contextual view, LIC is administering the system by having the overall control of accounts, roles and procedures for journal managers and administrators, and providing end users the option to freely register to the system and exploit the available personalized services.
3.3. Outputs of the Program
This business plan resulted in two collections, namely ‘Pasithee’ and ‘Dexamene’, which are outlined in the following.

3.3.1. Pasithee
‘Pasithee’ stands on the core of the e-publishing program of LIC as it addresses the improvement of scientific outputs through the provision of the appropriate technological solutions. Before stepping on the process LIC personnel made contacts and negotiations with the interested Editorial Boards to analyze their requirements and share their view on the system development. Through a dialectic process LIC set up the system and the editorial processes and instructed the members of the Editorial Boards.

‘Pasithee’ currently hosts three journals published by research groups of the University. ‘Electra’ is an e-journal published by the Centre for the Study of Myth and Religion in Greek and Roman Antiquity of the Department of Literature, University of Patras. ‘Electra’ publishes scientific articles that study the ancient Greek and Roman mythology and religion from literary, historic, anthropologic, archaeological, linguistic or philosophic aspects and are written in Greek, English, French and German.

‘Society and Theory’ intents to publish surveys and analyses by Greek and foreign scientists from the fields of education, politics, economy, technology, history or philosophy and which, according to the Editorial note, “have the theoretical and methodological perspective” to fit in this journal. Aim of the journal is to foster the scientific way of research and analysis of social phenomena with articles and announcements of events that will be organized by the Editorial Board.

‘Patras Working Papers in Linguistics’ is a biannual edition of the Centre of Modern Greek Dialects, Department of Philology, University of Patras. The aim of the editorial team is to cover “…any field of Linguistics, synchronic or diachronic, theoretical or applied”. PWPL is a journal that aims to publish special issues on selected interesting topics, with the first issue discussing ‘Morphology’. Papers can be submitted in English or Greek.

3.3.2. Dexamene
‘Dexamene’ is a collection that includes back-files of important Greek printed journals, giving thus the opportunity to everyone to have access to otherwise limited information. ‘Dexamene’ follows the process of continuous updating the past content of these journals by adopting a policy of moving wall. This is the main difference between the role of ‘Dexamene’ as an e-journal archiving system and the role of the other collections, like ‘Kosmopolis’ and ‘Pleias’ that focus on the archiving of ceased journals.

The collection is currently hosting two journals in the field of philosophy and social sciences, namely ‘Axiologika’ and ‘Deukalion’. ‘Axiologika’ focuses on the discussion of the social sciences field as related to the concept of critique, creating a plateau for epistemological discourse. ‘Deukalion’ is one of the oldest journals for philosophical enquiry and critique in Greece as it was first published in 1970. Its publishing history is divided into three periods of publication. In ‘Dexamene’ to twelve volumes, from 1992 to 2002, are included.

The services offered to ‘Dexamene’ journals copyright holders are similar to the ones of ‘Pasithee’. Once again the library discussed and signed a contract with the copyright holders for the provision of these journals and took the responsibility for
administering the system and preserving the content. LIC digitized the content and imported the relative metadata. Metadata entry was accomplished through an in-house application, which was specially developed by LIC in order to skip the editorial process steps.

4. Horizontal Services: The Directory of Greek Digital Resources

During the last years a significant activity regarding digital collections development has been identified in the Greek environment. This has lead to an increase of Greek resources in digital form, mainly addressing the issues of preservation of historic material and the development of Institutional Repositories. In this environment the need to coordinate activities in order to avoid the risks of developing duplicate collections and to enhance effective resource management was eminent. Therefore, in the absence of national supervision and administration, LIC developed a horizontal service, which is called the Directory of Greek Digital Resources. The Directory is running in a pilot version since February 2008 and aims to become a reference point to useful information to all scholarly and related Greek digital resources available on the web by (a) continuously monitoring and recording all resources, like content policies, access policies, etc., and (b) recording and analysing all basic functional information and parameters for each resource, such as services, technologies, standards, protocols, business models, etc.

The Directory collects data for the following types of resources:
- Bibliographical databases: library catalogues, bibliographies, tables of contents.
- Digital collections: journals archives, books, texts and articles collections, images and multimedia collections.
- Institutional Repositories: grey literature, technical reports, pre/post-prints, educational material, archives.
- E-journals.
- Experimental and research data collections.

Currently more than 200 resources operated by academic and research institutions, not-for profit organizations and museums, scientific societies, private publishers and governmental/state bodies are being listed.

The Directory is already considered to be a valuable tool for the systematic monitoring and analysis of the digital landscape in Greece focusing particularly to the growth of Greek digital content, the adoption of current technologies, models and standards, and on the quality of services to the users. In this way the Directory contributes effectively to the fulfilment of basic objectives, such as recording of resources and initiatives, sharing and dissemination of related information to users and community, co-ordination and cooperation of institutions’ executives and decision makers, follow-up of technical issues, evaluation, etc.
5. Discussion

LIC’s current e-publishing program is operating in an environment of crisis and transformation of the Greek economy and society. The conditions of this environment affect seriously the economic viability and stability of the program, however they also challenge the library to respond at the social level by forwarding open solutions to academia and to the public. The program has its own roots and throughout its planning and implementation was envisaged as a ‘feasible’ solution. As an organization that is synonymous to trustworthiness, devoted to preserving forms of intellectual capital, LIC avoided endangering these integral characteristics by opting for short-term solutions. Therefore the e-publishing activities are developed as a lightweight program that exploits every resource of our organization to support scholars publish their research on channels that pose no boundaries or require no additional efforts.

The application of the program is a learning process. The program currently moves from ‘infancy’ to ‘adolescence’, fixing mistakes and following best practices in every single area, from policy making to instruction and assessment of the impact. Furthermore, the cases of ‘Dexamene’ and ‘Pasithee’ present two different access models, dependent on the nature of the published content. It is acknowledged that alternative models exist, which may require the program and the ‘consciousness’ to mature. Therefore best practices are constantly explored in order for LIC to timely adapt to scholars’ requirements. Finally, as far as solidifying the outcomes is concerned, the effect of the publications in terms of width and depth of usage must be evaluated in cooperation with the Editorial Boards. LIC’s utter aim remains to provide useful services for useful resources and in this prospect as a first action automatic gathering of standardized metrics has been installed.

This program is a chance for the library to claim a leading role inside the institution. Thus, there must be actions taken to structurally reshaping the landscape. The library seeks the appropriate institutional interventions to formally strengthen and centralize further its role. The environment supports library’s endeavors to spearhead the initiative for conducting a policy framework between intra-institutional teams and organizations. So far, collaboration is informal and refers to the level of collection development, but with the pool of expertise in several fields from all agents it can extend to areas of policy formation, copyright control and legal aspects, technological advancement and so on.
Conclusions
The current paper presented a case of an e-publishing and e-archiving program by an academic library. This program is a response to several challenges, such as the shrinking of the economic budgets, the growth of Greek digital resources and the spread of the OA. The strict and narrow margins of economic crisis dictate the strong need to safely navigate the program by aiming at the horizon of reliability and viability. The program does not reinvent the library or help the library to identify its role; rather it calls to reinvest the knowledge and expertise capitals for the benefit of scholarly communication.

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