Three Disposition Policies of Electronic Theses and Dissertations

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Abstract

In this paper, we examine the disposition policies of Electronic Theses and Dissertations (ETDs) among three institutions: National Documentation Centre of Greece (NDC), Virginia Tech (VT) and West Virginia University (WVU) of USA. Also, we compare the implemented disposition policies by the three institutions. We analyze their similarities and differences. We select the three institutions because they comprise a representative sample of different national ETD initiatives.

At this new stage of the ETDs, there are various problems such as the security of the digital material, the control of the access to the digital content and the selection of disposition policy or policies of the digital content. These questions demand further investigation. While the content of the dissertations and the technologies to provide them exist, the availability is limited by the absence of decisions concerning the applicability of policies. We suggest alternative access policies in order the ETDs to be more open and accessible to all.

We analyze these questions and make suggestions about the solution approaches of these problems, especially solutions about the disposition policies of the digital material. In these proposed disposition policies, we take into account some criteria, such as, to be acceptable from all (Students, Universities, Providers, Publishers etc.), to conform to the current national legislation on copyrights, to ensure the viability of the digital libraries of ETDs etc.

Finally, we compare the implemented and the proposed policies. The more restricted proposed policies try to ensure better security of the digital material, to eliminate the fears of the publishers about prior publication, to ensure funds for the viability of the digital libraries of ETDs or to serve the different classes of users according to their various needs and their financial capabilities.

Preface

The *National Documentation Centre of Greece* (NDC), *Virginia Tech* (VT) and *West Virginia University* (WVY) of USA, have implemented disposition policies about their Electronic Theses and Dissertations.

We examine the evolution of the bibliographic database of the Hellenic National Archive of Dissertations of NDC to digital library. We make a throwback and evaluation of the project and during this process, we highlight the problems, questions that emerge to the new digital reality. We examine various problems and questions such as the security of the digital material, the control of the access to the digital content and the selection of disposition policy or policies of the digital content. This digital library does not contain theses but only digitized dissertations.

On the other hand, the VT and the WVU have Electronic Theses and Dissertations that have been submitted in digital form. In 1997, VT became the first institution to require that theses and dissertations be submitted in digital form. In addition, VT has a pioneering role at the ETD initiative. The VT has implemented various disposition policies about ETDs. We analyze these policies. We examine the four disposition policies used in WVY. These policies refer to four Web distribution options.

In addition, we compare the implemented disposition policies by the three institutions. We analyze their differences and their similarities. Then, we suggest alternatives solution approaches concerning the disposition policies of ETDs by taking into account some criteria:

- To be acceptable from all (Students, Universities, Providers, Publishers etc.).
- To conform to the current national legislation on copyrights.
- To be compatible with the common practice.
- To ensure the viability of the digital libraries of ETDs.

This paper is organised as follows. In sections 1, we present the creation of the digital library of dissertations of NDC. In addition, we highlight the problems and we examine the implemented disposition policy. In section 2, we analyze the four disposition policies of VT. In section 3, we examine the four disposition policies of WVU. In section 4, we compare the disposition policies of the three institutions. In section 5, we propose alternatives disposition policies. We end this paper with conclusions in section 6.

National Documentation Centre of Greece (NDC)

Throwback of the digital library

The NDC is the suitable organisation by the law 1566/1985 for collecting the dissertations that have been elaborated by the Greek students in Greek and Foreign Universities [4]. In 1986, in conjunction with the creation of

the archive in printed form, the bibliographic database of the Hellenic National Archive of dissertations was also created. ABEKT was the software used for the cataloguing. The provision of the database was within the mainframe computer "Hermes" which worked with success from 1986 until 1999.

The innovation started when NDC decided, in order to have better services for the users, to digitize the collections of the dissertations. In addition, the software ABEKT implemented UNIMARC, UNIMARC Authorities and ISO 2709. From November 1999, "Hermes" is abolished and all the bibliographic databases of the NDC are provided with the protocol Z39.50.

The digitization started in July 1998 - November 1999 and conducted by outsourcing. From November 1999, the bibliographic database of the dissertations constitutes a WEB database linked with the full text of the dissertations so it is a digital library of dissertations.

Digitization limitations

Within the procedure of the digitization, various technical limitations have emerged.

The proprietary digitisation and retrieval software was incapable of handling colour and large size images. Nevertheless, the colour images were scanned and stored using different equipment and software, in order to be used later, possibly with upgraded or different software.

In addition, the digitisation software could not import or export metadata, and the retrieval software was not reliable. For that reason, the ABEKT software was used as a solution for the original cataloguing of the metadata. Eventually, ABEKT was the software used for the provision of the metadata and the full content of the dissertations through Internet.

Another issue was the desired chapterization of the dissertations. The software was capable of separating the documents into possibly nested sections. This could serve to store the document structure, by mapping directly the table of contents or by examining the page layout, with chapters on the first level of hierarchy following with subchapters etc. As this would be too time consuming, a compromise was reached, to describe only the chapters in order to save human effort. The number of the chapters described was up to seven, even if the dissertations had more. Thus, each chapter has a heading that would normally be the table of contents given by the author, truncated to 80 characters because of software limitations.

The chapterization is related to the OCR procedure. OCR was needed to make, with small effort, the full text of the dissertations to be searchable and retrievable. OCR was not very effective on this kind of material and it was postponed for a later time far in the future. However, the table of contents were processed by OCR and manually corrected in order to be searchable and to facilitate the purpose of chapterization.

Disposition policy - retrieval - evaluation - problems

The bibliographic database and the full content of the dissertations are accessible through the Internet for onsite and offsite users (URL http://theses.ekt.gr). The user can search the bibliographic records and then with a link from the UNIMARC field 856, can view, download and print the full text of the dissertations page by page, without restrictions or fees. However, some dissertations may be unavailable to all users for up to three years by request of the author, because of possible copyright restrictions or pending publications. The restricted dissertations automatically become freely accessible on paper format and through Internet after three years. NDC uses a form, in which the student clarifies the desired access level for his/her dissertation.

In addition, the functionality of full text search is not provided. However, because of the OCR process on the table of contents, the user can retrieve directly the specific chapter and/or the specific page or pages of the chapter he/she needs. The retrieval of the full text is free for internal and external users though Internet page by page. Each page is an image file in tiff format and there is a watermark in all pages retrieved by the users. This ensures a minimum protection of copyrights and intellectual property.

The usage of the digital material for the period November 1999 - July 2001 was increased toward to the printed material. Users preferred the digital instead of the printed material, even though were unfamiliar with the new technologies or the Internet.

The digitized content was accessible from November of 1999 until July of 2001. From July 2001 until November 2002, the digitized content was inaccessible because of some problems: the security of the networks and the mechanism of access, the security of the digital content from unauthorized copying, the ambiguous legislation for copyrights and intellectual property and the selection of disposition policy or policies for the digital material. However, from November 2002 the digitized dissertations are freely accessible through Internet again.

Virginia Tech (VT)

Disposition policies of Electronic Theses and Dissertations (ETDs)

The VT has implemented four disposition policies for the ETDs. In order to handle special situations VT has implemented an *Approval Form*, which is filled, by the students and their committee when their ETD is completed and it is ready for submission. This document indicates that the student has obtained publisher permission if any third party copyrighted material is to be included in the ETD

and made accessible [8]. In this *form,* a specification clarifies the access level that the student wants for his/her ETD, and is signed by the student and the faculty advisors showing their agreement of the chosen access level [7]. The implemented disposition policies have four levels of access:

Unrestricted access policy

The ETDs are freely accessible for all users. Onsite and offsite users can read and download the ETDs, as PDF files, through the Internet. This access level allows immediate worldwide access to all ETDs, as soon as there are submitted. Information about the ETDs can be listed in dissertation abstract and/or other indexes accessible though VT Library's Catalogue and the NDLTD Union Catalogue. UMI downloads the ETDs and their dissertation abstracts from the VT server of the Library, after the cataloguing and archiving by the Library [1]. UMI is able to provide microfilms, papers (hardcopy) and electronic copies of the ETDs [7].

Restricted access policy

The access in this category is restricted only for researchers within the VT Community. The ETDs are accessible only for onsite users. Either an IP address or a valid ID, through a proxy server, controls the access and only VT affiliates can view or retrieve the full text. The onsite users can search and retrieve the metadata of ETDs that are indexed in the VT, through the ETD database and the catalogue of the library. The searchers outside of VT who know of a restricted ETD cannot obtain it through UMI service or through VT ILL. The ETD could be restricted for one, two or three years and then it is released for worldwide access automatically, unless the Office of Research and Graduate Student gives written approval for delayed release [7].

Mixed access policy

The students use this access policy rarely. The author has the opportunity to release parts of the ETD but not others or to publish two versions of a chapter, each with different access levels. For example, one version of an ETD chapter, which might contain information to be published in a journal, might be restricted to VT use only. Because the restricted chapter is viewed only by the VT affiliates, publishers consider it as not previously published. The second version of the chapter might be available for everyone in an *unrestricted* access level but might not contain the data that is going to be published later [7].

Withheld access policy

In this policy, the access is restricted for all. This is the most restrictive access option. Information about ETDs in this category is held only within the Virginia Tech Office of Research and Graduate Studies. Neither the VT ETD database nor the VT online catalogue reveals that the ETD exists. Not only is the full ETD inaccessible for everyone, but also the metadata. The only persons who know that the ETD was ever submitted are the author (student), the faculty advisory committee and personnel within the Office of Research and Graduate Studies [7]. Usually, theses and dissertations that contain patents or information for future publication are in this access level.

West Virginia University (WVU)

Disposition policies of ETDs

The WVU has implemented four disposition policies, which refer to four Web distribution options:

World access or world wide distribution

The University and ETD Task Force recommend this policy [9], which makes the ETD freely available worldwide for onsite and offsite users. The user can search the metadata from the NDLTD Union Catalogue or from the WVU ETD database and then can download any ETD as a PDF file.

Campus only access or WVU only distribution

This policy is recommended to students who have publishing concerns but are not sure how their publishers stand on the issue of ETDs and prior publication. Furthermore, this option addresses situations, such as, when the publisher is concerned that prior publishing of a book or article through a digital library will negatively influence sales. The WVU best advice is for students to contact prospective publishers regarding this issue. Direct access to the full text is limited to WVU IP addresses, which means that the ETDs are freely available only to computers at WVU campuses. The WVU University Libraries ILL Department provides ILL access by free electronic copy or print copy for a nominal fee. Metadata are available, searchable and retrievable for external offsite users through the NDLTD Union Catalogue or the WVU ETD database or the WVU online catalogue of the library. Students can embargo the ETDs *at WVU only distribution* for up to five years. If there is not a notification from the students, *WVU only distribution* will continue for a period of five years and then automatically will revert to *worldwide distribution* [9].

Campus encrypted access

This policy is recommended to students whose ETD contains material previously published by the author or material that is about to be published at the time of graduation. In addition, this option is also useful for inclusion of third party copyrighted materials where the publisher

may have requested at least an initial restriction. ETDs documents are directly available only to WVU campuses users, the access is limited to WVU IP addresses, and users must have password to open the document. ILL access is provided only by print copy for nominal fee [8]. This policy is similar to the *campus only access* policy except that password is needed for electronic access and the IIL is provided only by print copy. Metadata are freely available for everyone. The ETDs in the *campus encrypted access* may be embargoed - refers to the "embargoed by personal request" category - by the students initially for three years. Students may request an extension of the status up to a maximum five years within this access policy. Students may request removal of the ETD from the *embargoed* status at any time, or may designate a shorter initial embargo period. If the embargo lapses before the five years after submission, the ETD will be placed into the *WVU only distribution* unless *worldwide distribution* is requested [9]. If the ETD is held in the *embargoed by personal request* category for the full five years, it will be moved directly into the *worldwide distribution* category. In any case, ETDs that are held in a five years *embargoed by personal request* status will be moved into the *worldwide distribution* status automatically.

No access or restricted access

This policy is recommended to students who have a patent pending or third party proprietary concerns. This *no access* status addresses situations, such as when a patent application is planned or proprietary interests are at stake. No access is provided whatsoever until legal situations are cleared. The ETDs are unavailable for everyone. Not even users from WVU campuses or computers at WVU can access the ETDs. Students may embargo their ETDs in this *no access* category for up to one year. This embargo - refers to "embargoed for patents/proprietary purposes" - may be extend for one additional year if it is necessary but the student must contact the ETD archivist to obtain the extension. When the embargo lapses the ETD it will move to *WVU only distribution*. Five years after submission the document will be moved into *worldwide*

distribution unless the ETD Archivist has granted an exception [9].

A final definition is essential. There are two kinds of embargo:

- *Embargo for patent/proprietary purposes*, which refers to patent pending or third party proprietary concern and it is usually used in *restricted access* policy and
- *Embargo for personal request*, which is usually used in *campus encrypted access* policy.

Comparison among the implemented disposition policies of the three institutions

We make a comparison among the policies that have implemented from the three institutions: NDC (Greece), VT and WVU of USA.

In table 1, we present the differences among the implemented disposition policies of the three institutions. The first column, presents the names of the implemented disposition policies. The second contains the Institutions that have implemented the policies. The third shows the metadata accessibility for onsite and offsite users. The fourth shows the access to the full content of ETDs, for onsite and offsite users. The fifth, presents the delivery method. The sixth shows if there are content restrictions. The seventh, shows if time restrictions have been implemented. The last column has possible comments for each case.

When the access is provided, ETDs are freely accessible for onsite users, except for NDC where onsite and offsite users have not access for the dissertations that may be embargoed for up to three years. In addition, the time restrictions concern the access of the offsite users, except for NDC that are applied to onsite and offsite users.

Tabelle 1: Differences among the disposition policies of the three institutions

Policies	Institution	Metadata accessibility		Access		Delivery method	Content restrictions	Time restrictions
		Onsite users	Offsite users	Onsite users	Offsite users			
Unrestricted access	VT	Yes	Yes	Yes	Yes	Online	No	No
World access	WVU	Yes	Yes	Yes	Yes	Online	No	No
Free access	NDC	Yes	Yes	Vary*	Vary*	Online, ILL+	No	Up to three years
Restricted access	VT	Yes	Yes	Yes	No	Online	No	Up to three years
Campus only access	WVU	Yes	Yes	Yes	No	Online, ILL+, ILL by free electronic copy	No	Up to five years

Campus encrypted access	WVU	Yes	Yes	Yes	No	Online, ILL+	No	Up to five years
Mixed access	VT	Yes	Yes	Yes	Vary	Online	Yes	No
Withheld access	VT	No	No	No	No	No	No	No
No access	WVU	No	No	No	No	No	No	Up to two years

* The full text of some dissertations may be unavailable for onsite and offsite users for up to three years. +ILL is provided by print copy for a nominal fee.

The free access policy of NDC, the unrestricted access policy of VT and the world access policy of WVU have common characteristics: the metadata and the ETDs are freely accessible for all, the delivery method is usually online, the ETDs are accessible for onsite and offsite users without content restrictions and no time restrictions are applied. However, there are two differences: the embargo status of some dissertations at NDC, and the ILL by print copy for a nominal fee provided by NDC, additionally to the online delivery method.

The embargo status of the free access policy of NDC is similar to the withheld access policy of VT. However, in the withheld access policy not even the metadata are accessible and the ETD maybe withheld not only for three years but also for more. Furthermore, the withheld access policy of VT is similar to the no access policy of WVU. In these two policies, the metadata and the ETDs are not accessible by anyone. The main difference is that in the no access policy of WVU the ETDs become accessible after two years for users on the campuses of WVU and are world wide accessible after five years. On the other hand, in the withheld access policy there is no provision that the ETDs will be accessible in the future.

The restricted access policy of VT is similar to the campus only and campus encrypted policies of WVU. In these three policies, the ETDs are accessible only for onsite users and the access is controlled by the IP addresses of the affiliates of the two Universities. The differences are:
- Different time restrictions: up to three years (restricted access policy of VT), up to five years (campus only and campus encrypted policies of WVU).
- ILL access is not provided in the restricted access policy of VT.
- Password is needed for electronic access and ILL is provided only by print copy in the campus encrypted policy

Only VT uses the *mixed access* policy, in which content restrictions may exist.

Proposals of disposition policies for ETDs

In order to make ETDs more accessible and opened, we propose solution approaches about the disposition policies of the digital material. The proposed policies aimed at dealing with matters, such as, the copyrights, the intellectual property and the elimination of fears about the electronic availability of the dissertations. Some policies may seem more restricted. The more restricted proposed policies try to ensure better security of the digital material, to eliminate the fears of the publishers about prior publication, to ensure funds for the viability of the digital libraries of ETDs or to serve the different classes of users according to their various needs and their financial capabilities. In addition, we classify the proposed policies in a uniform way in order to ensure the interoperability, the simplicity, the easier definition and extraction of statistics about the policies.

The proposed policies have common characteristics:
- The metadata are freely accessible for onsite and offsite users,
- Access to the ETDs is always provided to the onsite users and
- ILL is provided by electronic or print copy for a fee.

In table 2, we present a synopsis of the proposals of disposition policies for ETDs by highlighting their differences. The first column presents the names of the proposed disposition policies. The second column shows the access for offsite users. The third column presents the delivery method. The fourth column shows if there are content restrictions. The fifth column indicates if the access is provided for a fee. The last column contains possible comments for each case.

Tabelle 2: Proposals of disposition policies for ETDs

Policies	Access for offsite users	Delivery method	Content restrictions	Access for a fee	Comments
Free access	Yes	a) Online, b) ILL	No	No	
Partial access	Partial	a) Online, b) ILL	Yes	Yes	Parts of the ETDs are freely accessible. Other parts are accessible with charge

Controlled remote access	Specified users	a) Online, b) ILL	No	Yes	Access is provided to registered libraries and clients
Content restrictions access	Yes	Online	Yes	No	Parts of the ETDs are restricted
Content restrictions access with charge	Yes	Online	Yes	Yes	Parts of the ETDs are restricted
Access by user category	Diversified	a) Online, b) ILL	No	Diversified	The access and the ways of charging are diversified according to the user category
Access by university	Vary	a) Online, b) ILL	Yes	Yes	Each university has access to its ETDs
The most general	Diversified	a) Online, b) ILL	Yes	Diversified	

Comparison among the proposed and the implemented disposition policies

We highlight the policies that are completely different from the implemented policies of the three institutions.

- In the partial access policy, the ETDs are freely accessible for onsite users. In contrast, for offsite users parts of the ETDs are freely accessible but others are accessible only with charge.
- In the controlled remote access policy, the ETDs are freely accessible for onsite users but for offsite users the access is restricted only to specific groups of users (registered libraries and clients) with charge.
- In the access by user category policy, the access for offsite users is provided for a fee. Also, the access and the ways of charging for offsite users are diversified according to the user category.
- The most general policy is similar to the access by user category policy. The only difference is that in the most general policy there are content restrictions.
- Finally, in the access by university policy each university has access to its ETDs. The ETDs of other universities are accessible for a fee paid by the user. This policy can be implemented in a union catalogue of ETDs.

Conclusions

We examined and compared the disposition policies used from these three institutions. In addition, we proposed some alternative disposition policies.

The availability of ETDs depends on the selection of the disposition policy. In most of the cases, the ETDs are freely available to onsite and offsite users. However, there are restrictions and some ETDs are accessible only to onsite user and some others are restricted to all.

We proposed some alternatives disposition policies in order to make ETDs more accessible and open. However, some policies may seem more restricted. These policies are proposed in order to ensure better security of the digital material, to eliminate the fears from the pub-

lishers about prior publication and to ensure funds for the viability of the digital libraries of ETDs.

The ETDs belong to the category of the "grey literature" which is essential to be known to the researchers, academics, students etc. Except for the cases of patent pending, ETDs should be open and accessible to all, because this is the purpose of the existence of digital libraries of Theses and Dissertations. The electronic submission and access of ETDs gives the opportunity to students and academics to know about the evolution of the research in their topic. This ensures the promotion of the research and the development of the new technologies. In contrast, the printed ETDs were unknown and rarely used. In conclusion, the purpose is the development of a global digital library of ETDs, which will be very useful for all.

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