

Knowledge Management Policies on Digital Content of Libraries

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We analyze the use of the digital content of non-profit libraries, such as, national and academic, worldwide, as expressed through the restrictions of intellectual property and the knowledge management policies. We classify the policies according to factors, such as, the content creation type, its acquisition method and intellectual property, analyze their relationship and extract quantitative remarks. We propose a policy model of access, reproduction and use for the digital content of national and academic libraries. The model contains not only library implemented practices, but also, new, and not implemented so far, policies, which can offer solutions to management of digital information and knowledge; in addition, rules on policies supplemented by their exceptions. Two separate policy models, for the digitized and the born-digital, arise and presented respectively, and relevant conclusions that valid on each case are extracted. Finally, findings on policies, common, for national and academic libraries, and unique, are presented.

“Keywords”: Decision support systems, knowledge management policies, libraries

1. Introduction

We detect, examine and analyze the use of the digital content as expressed through the restrictions of intellectual property, and the knowledge management policies. The knowledge management refer to access and reproduction policies used for the digital content of libraries. We separate the libraries in categories according to their intention. We select non-profit libraries, such as national and academic, worldwide, which have well established traditions of cooperation and they play a leading role in the production and dissemination of digital content. In addition, they have a leading role to play in using new technologies, such as digital libraries. They have implemented an appropriate infrastructure for the development of digital libraries and policies; and especially academic libraries facilitate the use of new technologies by students. Due to their leading position in the academic system, scientific community and society, they have prestige, and their practices and policies can be easily disseminated to the rest of the library (public libraries etc.) and even of the commercial sector (companies, publishers, digital content providers etc.).

However, the problem is that libraries are in a transition period from conventional to digital formats and have not yet developed common practices and traditions on policy for complex and complicated digital content. This can prevent cooperation and interoperability in libraries, restricting the usefulness of their services. Conventional policies do not map directly onto digital ones with differences primarily due to the easy duplication properties of the digital content. In addition, most academic libraries face difficulties in resolving the problems that arise due to the properties of the digital content, such as, for instance, the access to university digital collections by students on campus and by distance learners.

The access and reproduction policies of the digital collections of thirty-five leading digital libraries worldwide, twenty academic and fifteen national, were examined. Sixteen of them,

ten academic and six national, are presented here, those, which are considered to have the most diversified and innovative access and reproduction policies, and are the most active in the area of digital libraries. We were interested in libraries that have large digitization projects and preferably, they use or, even better develop, commonly used software (such as *Greenstone* [Witten (2003)]) to provide their digital content. Mostly, we were interested in libraries which have collections with various *content creation types* (digitized, born-digital) or *content types* (video, audio etc.), various copyright owners (libraries, individuals, organizations such as publishers etc.), diversified access and reproduction policies and various acquisition methods (license, purchase etc.). The libraries studied, corresponding to the above criteria, are central academic libraries of large universities, which act as the coordinating bodies for the entire library system of their universities; and national libraries that have a leading role in the deposition and dissemination of digital content.

Analyzing and studying a big sample of national and academic libraries, we realized that the majority of them follow similar policy rules and models. We selected thirty-five of them to analyze further, because they differentiate on policies, content and vision; more libraries will give us more quantitative but not qualitative results. We present here sixteen of them, because they contain all applied policies that appear on these thirty-five libraries, which we analyzed further.

To collect the data, we derived information from the websites, in some cases supplemented by personal communication with the libraries and from relevant studies, such as by Meyyappan [(2000)], Walters [(2003)] etc. Meyyappan [(2000)], who described the status of twenty digital libraries, mentioning also their access policies, has undertaken similar work previously. In addition, Walters [(2003)], presents an introduction to the acquisition of video media (DVD and VHS) in academic libraries, with an emphasis on the procedures most appropriate for undergraduate colleges. However, no previously studies have focused exclusively on access and reproduction policies.

In section 2, the policies of access and reproduction are classified according to factors, such as, the content creation type, its acquisition method and intellectual property, as expressed through copyright ownership; their relationship is analyzed and quantitative remarks are extracted. In section 3, we propose a policy model for the digital content of national and academic libraries. The proposed policy model is not only comprised of the most common practices that the libraries implement, but also, of new ones that have not been implemented so far, and can offer solutions to problems of access, reproduction and digital content management. In addition, the model consists of rules and their exceptions, about which factors lead to specific policies. Due to the differences on policies according to the content creation type factor, we divide the policy model onto two separate ones, for the digitized and the born-digital content respectively, by extracting the relevant conclusions that are valid on each case. On the two models, we make proposals and recommendations on policies when different copyright terms are applied. At the end, in section 4, we present our findings on policies, common, for national and academic libraries, and unique. Finally, the national and academic policies are compared; the similarities and differences that arise are presented. Concluding remarks are made in section 5 and references are mentioned in section 6.

2. Classification of Policies

In “Table 1”, we classify the access and reproduction policies of the university digital collections, according to the content creation type, its acquisition method and copyright ownership. The relations among the factors and the policies are analysed and the diversification of policies that arise is illustrated and presented in section 3, where we analyze the proposed policy model.

The majority of values in “Table 1” are abbreviations, used for formatting reasons. The values are mentioned for each column and case and they are explained below. The table is ordered according to the content creation type (third column, value: *C-t*). There are three blocks or categories: digitized (value: *Dig*), digitized and born-digital (value: *Dig, B-d*), and born-digital (value: *B-d*). Subsequently, each block is sorted according to geographical location (second column, value: *Loc*), and finally, the collections or the libraries (first column, value: *Col / Lib*) are ordered alphabetically for each geographical location.

The first (value: *Col / Lib*) and second (value: *Loc*) columns give information about the name of the collection and their location. The first column contains the collection names from sixteen libraries. Each row represents either a whole library or some of its parts (split into separate rows), because they are diversified in terms of factors and policies from the rest of the collections of the library presented as a whole.

We present the abbreviations of the libraries and collections in turn: *Aladin Digital Library* (ADL), *American Memory* (AMMEM) [LC (2005C)] of the *Library of Congress* (LC), *Felix E. Grant Collection* (FEG) [UDC (2003)] of ADL, *Historical Monograph Collection* (HM) [COUL (2003A)] of *Cornell University Library* (COUL) [COUL (2004)], and *Image Collections* (IC) of COUL [COUL (2003A)]. *Northwestern University Library* (NUL) [NUL (2003)], *North Carolina State University Libraries* (NCSUL) [NCSUL (2002)], *Prints Photographs Online Catalog* (PPOC) [LC (2004), (2005A), (2005B), (2005C)] of LC, *Samuel J. May Anti-Slavery Collection* (SJMAS) [COUL (2003B)] of COUL. *Cambridge University Library* (CUL) [CUL (2002), (2003)], *Electronic Beowulf* (EB) [BL (1998A), (1998B)] of the *British Library* (BL), *International Dunhuang Project* (IDP) [BL (1998C)] of BL, *Miguel de Cervantes Digital Library* (MdCDL). *New Zealand Digital Library* (NZDL) [Witten (2003)], *Timeframes* (TF) [NLNZ (2000)] of the *National Library of New Zealand* (NLNZ) *Digital Images* (DI) [NLS (2004)] of the *National Library of Scotland* (NLS), *Images of Saint Petersburg* (ISP) [NLR (2003)] of the *National Library of Russia* (NLR). *Harvard University Library* (HUL) [HUL (1999)], *Electronic Collection* (EC) [NLC (1998)] of the *National Library of Canada* (NLC), *Glasgow Digital Library* (GDL) [GDL (2002)]. *Dartmouth College Digital Library* (DCDL) [DCL (2003), (2004)], *Past Masters* (PM), *Patrologia Latina* (PL) of COUL.

The third column (*C-t*) shows how the digital content was created. We have two cases: *digitized* (*Dig*) or *born-digital* (*B-d*) and a collection can have either one or both (*Dig, B-d*) content types. The fourth column (*A-m*) shows the acquisition method of the content, which has five values: *library* (*Lib*), *third-party* (*T-p*), *license* (*Lic*), *purchase* (*Pur*) and *voluntary deposit* (*V-d*). *Library* means that the library has created its own digitized and/or born-digital content. *Third-party* means that the library has digitized and/or acquired born-digital third-party content, which may be free or restricted by the owner. *License* means that the library has acquired digitized and/or born-digital content through license. *Purchase* means that the library has purchased digitized and/or born-digital content. *Voluntary deposit* means that the library has acquired born-digital content through voluntary deposit.

The fifth column (*C-o*) presents the copyright owner, which has five values: *library* (*Lib*), *individual* (*Ind*), *organization* (*Org*), *vary* and *public domain* (*P-d*). *Library* means that the copyright of the content is owned by the organization that the library belongs to, and is administered by the library. *Individuals* and/or *organizations* mean that the copyright belongs to owners other than the library, which can be individuals and/or organizations respectively; this is the meaning of the term *other owner(s)* that is used frequently on the following sections. *Vary* means that the copyright varies from collection to collection. *Public domain* means that nobody has or claims the copyright of the content.

Access policies are stated in the sixth and the seventh columns. *On-campus access for onsite users is always free*; this is the reason of not putting a column for on-campus onsite access. The sixth column (*Off-cam*) shows the off-campus access policy for onsite users and the seventh (*Offsite*) the offsite access policy. In these columns, we have three values: *yes*, *no*, and *some*. *Yes* means that the off-campus onsite and the offsite access are both free. *No* means that the off-campus onsite and the offsite access are not provided. *Some* means that the off-campus onsite and the offsite access are provided in some cases. In off-campus onsite access (*Off-cam*), we also have the values *vary*, meaning that the off-campus onsite access varies from item to item, and *N/A* meaning that the off-campus access is not applicable, which is mostly faced on national libraries. In the offsite access column (*Offsite*), we also have the values *mostly no (M-no)*, the offsite access is not provided in most of the cases, and reciprocal, *mostly yes (M-yes)*, the offsite access is provided in most of the cases.

“Table 1” Factors of Access and Reproduction Policies for Digital Collections

Col / Lib	Loc	C-t	A-m	C-o	Off-cam	Offsite	P-r	Commercial reproduction		
								Allowed	W-p	Fee to
ADL	USA	Dig	Lib	Lib	Yes	Yes	Yes	No	N/A	N/A
AMMEM	USA	Dig	Lib, Lic, T-p,	Lib, Ind, Org, P-d	N/A	Yes	Fair	Yes	Own	Own
FEG	USA	Dig	Lib	Lib, Ind, Org	No	No	Yes	Yes	Own	Own
HM	USA	Dig	Lib	Lib, P-d	Some	Some	Fair	Yes	Lib	Lib
IC	USA	Dig	Lib, T-p	Lib, Ind	Yes	Some	Fair	Yes	Lib, Own	Lib, Own
NUL, NCSUL	USA	Dig	Lib, T-p	Lib+	Yes	M-yes	Case	Case	Case	Case
NCSUL	USA	Dig	Lib	Vary	Yes	Some	Fair	No	N/A	N/A
PPOC	USA	Dig	Lib, Lic, T-p,	Lib, Ind, Org, P-d	N/A	Some	Fair	Yes	Own	Own
SJMAS	USA	Dig	Lib	Lib	Yes	Yes	Fair	Yes	Lib	Lib
CUL	UK	Dig	Lib, T-p	Lib+	Yes	M-yes	Yes	Yes	Lib, Own	Lib, Own
EB	UK	Dig	Lib, T-p	Lib	N/A	Some	Yes	Yes	Lib	Lib
IDP	UK	Dig	Lib, T-p	Lib, Ind, Org	N/A	Some	W-p	Yes	Own	Own
MdCDL	ES	Dig	Lib, T-p	Lib, P-d	Yes	Yes	Yes	Some!	Lib	No
NZDL	NZ	Dig	T-p	Lib, Ind, Org, P-d	Yes	Yes	Yes	No	N/A	N/A
TF	NZ	Dig	Lib, T-p	Lib, Ind, Org, P-d	N/A	Yes	Yes	Yes	Lib, Own	Lib*, Own
DI	SC	Dig	Lic	Lib, Ind, Org	N/A	Vary	Yes	Yes	Lib, Own	Lib, Own
ISP	RU	Dig	Lib, T-p	Lib	N/A	Some	Yes	Yes	Lib	Lib
HUL	USA	Dig, B-d	Lib	Lib	Yes	M-no	Yes	Yes	Lib	Lib
			Lic, Pur	Lib, Org	Some	M-no	Yes	Yes	Lib	Lib, Own
MdCDL	ES	Dig, B-d	Lic	Vary	Yes	Yes	Yes	No	N/A	N/A
GDL	UK	Dig, B-d	Lib, T-p	Lib, Ind, Org	Yes	Yes	Yes	Yes	M-Own	Own
DCDL	USA	B-d	Lib	Lib	Yes	Some	Fair	Yes	Lib	Lib
			Lic, Pur	Org	Some	No	Fair	Yes	Own	Own
NUL, NCSUL	USA	B-d	Lic, Pur	Lib, Org	Some	No	Case	Case	Case	Case
NCSUL	USA	B-d	Lic, Pur	Vary	Yes	Some	Fair	No	N/A	N/A
PM, PL	USA	B-d	Lic	Ind	Yes	No	Fair	No	N/A	N/A
EC	CA	B-d	T-p, V-d, Lic	Ind, Org	N/A	Some	Yes	Yes	Lib, Own	Lib, Own
CUL	UK	B-d	Lic, Pur, V-d	Org	Vary	M-no	Yes	No	N/A	N/A

+ The library is usually the owner, but sometimes there are other owners or the content is in public domain.
! The commercial reproduction is usually prohibited, but in some cases is merely permitted with written permission.
* The reproduction fee is for preservation and not for copyright. If the owner requires copyright fee, this is additional to the reproduction fee. However, usually the NLNZ does not charge a reproduction fee when a copyright fee is due.

The off-campus onsite access always refers to onsite users, students, faculty, staff etc., which are affiliated with the university, and they may access the content outside of the university, independently of their location, usually by using user name and password authentication. For example, a Greek student may have access to e-journals of CUL, from its home in Greece, during summer. *The off-campus onsite access is not applicable on national libraries.* In contrary, offsite access refers to the rest of the users that are not affiliated with the university, which use the Internet, for accessing the content – without having the privilege of authentication and most of the times with different and restricted access rights from off-campus onsite users.

The eighth column (*P-r*) shows the *private reproduction* policy (or reproduction for private use), which has four values: *yes, fair use (Fair)*, *written permission (W-p)* and *case-by-case (Case)*. *Yes*, means that the private reproduction is free with a *credit* (mention) to the source, *fair use* means that it is provided under fair use provisions, *written permission* means that it requires written permission from the copyright owner and *case-by-case* means that it is on case-by-case basis.

The ninth, tenth and eleventh columns refer to the commercial reproduction policy. The ninth column (*Allowed*) shows if commercial reproduction is permitted, which has four values: *yes, some, no*, and *case-by-case (Case)*. *Yes* means that the commercial reproduction is permitted with written permission from and fees paid to the owner (library and/or other owners), but sometimes (e.g. MdCDL), even if written permission is needed, fees are not charged. *Some* means that the commercial reproduction is sometimes permitted, *no* means that it is not authorized and *case-by-case* means that it is on case-by-case basis.

The tenth column (*W-p*) states who gives the written permission for the commercial reproduction, if it is needed. We have five values: *library (Lib)*, *owners (Own)*, *owners mostly (M-own)*, *case-by-case (Case)* and *N/A*. *Library* means that the written permission is given by the library, *owners* means that it is given by owners other than the library, *owners mostly* means that it is given mostly by other owners and less by the library. *Case-by-case* means that the written permission is examined on case-by-case basis and *N/A* means that it is not applicable. *Library* and *owners* can appear as value *Lib, Own*, if both the library and the owners may require written permission.

The eleventh column (*Fee to*) states to whom the fee should be paid for commercial reproduction, if it is needed. We have five values: *library (Lib)*, *owners (Own)*, *case-by-case (Case)*, *no* and *N/A*. *Library* means that the fee is paid to the library. *Owners* mean that the fee is paid to owners other than the library. *Case-by-case* means that the payment of the fee is examined on case-by-case basis, *no* means that a fee is not charged and *N/A* means that it is not applicable. If the value *library, owners (Lib, Own)* appears, the fee should be paid to both library and owners.

2.1 Quantitative Analysis of Table 1 and Remarks

From the analysis above, we can derive some quantitative data that are extracted from “Table 1”, about which factors lead to specific policies, which are usually related to the copyright factor.

2.1.1 Acquisition and Copyright

- In general, national and academic libraries seem to prefer digitizing their own copyrighted or third-party content where copyright terms are clarified and clear.

- National libraries seem to prefer (86%) digitizing their own or third-party content; in 50% of cases they have the copyright and in the rest 50%, other owners have it.
- Rarely (14%) national libraries acquire digitized content through license and when this happens, the copyright varies (libraries, organizations, individuals etc.) according to the license terms.
- Academic libraries seem to prefer (79%) digitizing their own content on which they have the copyright.
- Academic libraries also often digitize free third-party (43%) or public domain (21%) content.
- Born-digital content is acquired mostly (73%) through license and/or purchase from copyright owners (organizations, individuals etc.).
- Sometimes (in 17% of cases) libraries create their own born-digital content on which they usually have the copyright.
- There is a progress in voluntary deposition of the born-digital content in 10% of cases, which when happens, the copyright belongs to other owners (usually organizations, such as publishers), but still is a practice that applied rarely.
- When the acquisition of born-digital content is mostly through license and/or purchase, then the copyright belongs to other owners (50% of cases) or shared among library and other owners (25%) otherwise it varies from item to item (25%).

2.1.2 Copyright, Off-Campus Onsite and Offsite Access

- In 50% of cases, off-campus onsite access is provided. 16% provide it in a limited sense. Only 4% do not provide off-campus onsite access and, in 4% of cases, it varies according to the collection; however, in 26% of the cases it is not applicable, which is faced on national libraries.
- 36% of the libraries provide full offsite access. Equally, 36% provide limited access and 25% do not provide access at all; however, in 3% of the cases the access varies on item basis according to license.
- National libraries provide in 57% of cases limited offsite access, in 29% full offsite access and in 14%, the access, varies on item basis according to license.
- National libraries provide limited offsite access when the copyright shared among libraries and other owners (50%) or when the library, even if is the copyright owner, provides only onsite access (50%).
- Academic libraries provide full offsite access (42%), limited access (21%) and in 37% of the cases do not provide access at all.
- Academic libraries do not provide offsite access or providing it on a limited sense, when licensing and copyright restrictions are applied.
- When offsite access is limited or not provided, there are licensing restrictions and the copyright belongs to other owners (55%), or the copyright belongs to other owners (11%), or it shared among libraries and other owners (17%); or sometimes (in approximately 17% of cases) the library, even if is the copyright owner, provides only onsite access.
- In 60% of cases, off-campus and offsite access are different. In such cases, when off-campus onsite access is limited, offsite access is not provided due to licensing and copyright restrictions. In addition, when off-campus onsite access is provided, offsite access is limited or it is not provided because either the copyright belongs to other owners or the library provides only onsite access. Finally, when off-campus onsite access varies from item to item, offsite access is not provided.
- In national libraries, where the off-campus access is not applied, the offsite access is limited (63%) or provided (25%) or it varies (12%) according to license.

2.1.3 *Copyright and Private Reproduction*

- Private reproduction is usually free with a credit to the source (in 54% of cases) or under fair use provisions (36%) or it is on case-by-case basis (7%); rarely (3%) and only on national libraries written permission is required.
- In national libraries, private reproduction is usually free with a credit to the source (in 63% of cases), or under fair use doctrine (25%), or rarely, written permission is required (12%).
- In academic libraries, private reproduction is usually free with a credit to the source (in 53% of cases), or under fair use provisions (37%) or it is on case-by-case basis (10%).
- When the library has the copyright of the content, then private reproduction is free with a credit to the source (in 50% of cases), or under fair use provisions (50%).
- When the library and other owners share the copyright, then private reproduction is free with a credit to the source (in 57% of cases), or it is under fair use provisions (22%) or it is on case-by-case basis (14%) and in 7% needs written permission (national libraries).
- In national libraries, when the library and other owners share the copyright, then the private reproduction is free with a credit to the source or under fair use provisions, equally in 40%; or in 20% of cases, the private reproduction needs written permission from the library.
- In academic libraries, when the library and other owners share the copyright, then private reproduction is free with a credit to the source (in 60% of cases), or it is under fair use provisions (20%) or it is on case-by-case basis (20%).
- When other owners have, the copyright, then private reproduction is free with a credit to the source, or under fair use provisions, equally in 50%.
- In national libraries, when other owners have the copyright, then the private reproduction is free with a credit to the source.
- In academic libraries, when other owners have, the copyright, then private reproduction is under fair use provisions (67% of cases) or it is free with a credit to the source (33%).

2.1.4 *Copyright and Commercial Reproduction*

- 64% of cases allow commercial reproduction with written permission from and fees paid to the owner (library and/or other owners). 25% prohibited it, 3% provide it on a limited sense and 8% decide it on case-by-case basis.
- National libraries allow commercial reproduction with written permission from and fees paid, to *other owners* (individuals, organizations) in 37% or to the library in 25%, or to both library and other owners in 26%.
- Academic libraries allow commercial reproduction in 53% of cases with written permission from and fees paid to the *owner* (library and/or other owners) prohibited it in 37% and decide it on case-by-case basis in 10%.
- 32% allow commercial reproduction with written permission from and fees paid to the library, when library is the copyright owner. 32% allow it with written permission from and fees paid to the other owners and 26% with written permission from and fees shared to owners (library and/or other owners), when the library, individual and organizations share the copyright.
- National libraries allow commercial reproduction in 25%, with written permission from and fees paid to the library, when the library has the copyright. 38% allow it with written permission from and fees paid to other owners and in 37%, with written permission from and fees shared to owners, when the library, individuals, and organizations share the copyright.
- Academic libraries allow commercial reproduction in 40%, with written permission from and fees paid to the library, when the library has the copyright. 30% allow it with written permission from and fees paid to other owners and in 30% with written permission from

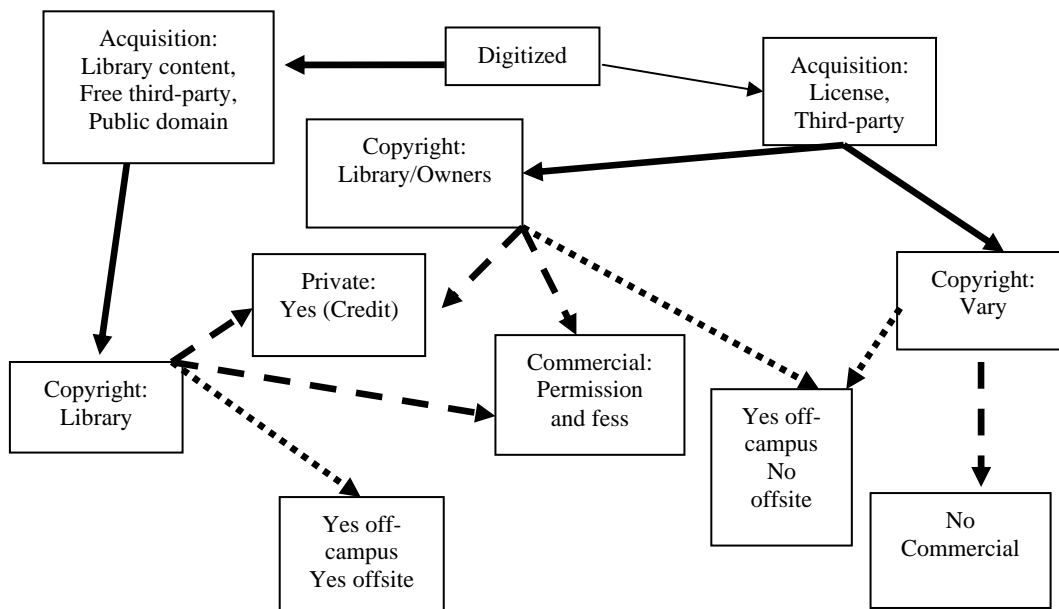
and fees shared to owners (libraries and/or other owners), when the library, individuals, and organizations share the copyright.

- 50% allow commercial reproduction when organisations have the copyright with written permission from and fees paid to other owners. In 50% of cases, it is not authorized.
- When individuals have, the copyright, then commercial reproduction is not authorized.
- 67% permit commercial reproduction when the library mostly has the copyright with written permission, mostly from the library and rarely from other owners, and fees paid to the library and other owners. The remainder (33%) allow it on case-by-case basis.
- When the library shares the copyright with individuals or organizations, then the commercial reproduction is usually allowed in 67% with written permission from and fees shared to owners or in the remainder 33% it is decided on case-by-case basis.

3. Policy Model: Rules and Exceptions

From this analysis, we can derive some generalized rules, policy model, about which factors lead to specific policies. Common practice shows that the on-campus onsite access is always free, independent of copyright ownership and the content creation type. We present a policy model that contains rules and exceptions for the digitized (“Figure 1”) and the born-digital (“Figure 2”) content separately. We divide the rules mostly by using the factor of copyright ownership. On the two figures presented below, the thick arrows show the most common rule; the dots indicate the access policies and the dashes the private and commercial reproduction policies. The figures are organised onto three layers. The first contains the creation type of the content and its acquisition methods; directs to the second one that represents the copyright ownership; and finally, directs to the third one that represents the access and reproduction policies, showing how the factors affect the policies.

3.1 Policy Model for the Digitized Content



“Figure 1” Policy Model for the Digitized Content (dots = access policies; dashes = reproduction policies)

Most libraries have decided to digitize their own content on which they have the copyright. Common approaches showing that the libraries have the copyright for the digitized version of the free conventional third-party and the public domain content. A reasonable choice for the libraries would be to provide their own copyrighted digitized content with free onsite (on and off-campus) and offsite access, to permit private reproduction with a credit to the source and to require written permission and fees for commercial reproduction.

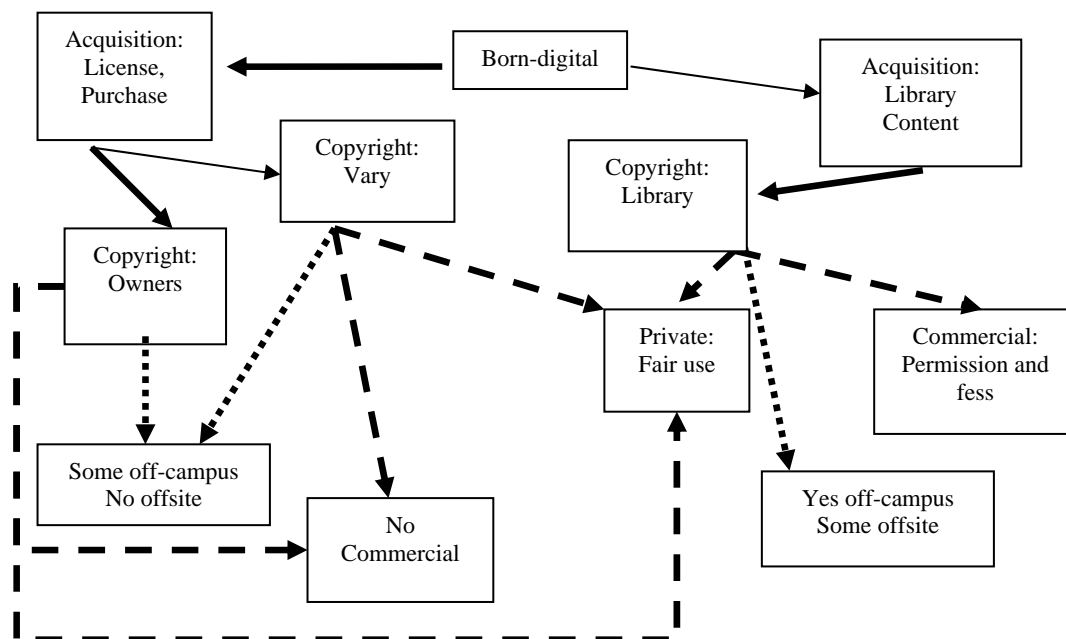
When the copyright varies (libraries and other owners, other owners only, varies from item to item) – on licensed or third-party digitized copyrighted content – the common approach is the provision of free onsite and no offsite access. Private and commercial reproduction should be permitted to onsite users only (as the access) with a credit to the source and with written permission from and fees paid to the owner (library and/or other owners) respectively. Another frequently used practice is the prohibition of commercial reproduction, which is used very often when the copyright varies on item-by-item basis. Libraries do not so often acquire licensed or third-party digitized content, but when this happens, the previous model and rules are applied on access and reproduction policies.

On the previously presented policy model, there are some exceptions of the rules. The exceptions may be applied on three cases. First, when the libraries have or administer the copyright for the digitized version of free conventional third-party and public domain content, it is possible to provide it with free onsite and no offsite access, to apply fair use provisions for the private reproduction and to examine the commercial on case-by-case basis.

Second, when libraries and other owners, share the copyright of the free third-party digitized content, the access could be prohibited mostly or be provided for onsite users only and be *limited* (some) for offsite. Fair use provisions may be applied for the private reproduction; and for the commercial, the basic rule of written permission from and fees paid to owners (library and/or other owners) is followed.

Finally, when the copyright varies on item basis, which is encountered mostly on the licensed content, the access may be provided to all users, the private reproduction may follow the fair use doctrine but the commercial follows the rule of prohibition.

3.2 Policy Model for the Born-Digital Content



“Figure 2” Policy Model for the Born-Digital Content (dots: access policies, dashes: reproduction policies)

Most libraries acquire born-digital content through license and/or purchase with organizations (e.g. publishers) and individuals. Most libraries have decided to acquire licensed born-digital content if they will be responsible for its control and use. Common practice shows that mostly other owners have the copyright of the licensed content. A reasonable choice would be for the libraries to provide their own copyrighted born-digital content with free onsite and some offsite access, to permit private reproduction under fair use provisions and to require written permission and fees for commercial reproduction. Libraries do not very often create born-digital content, but when this happens, they have the copyright; and the previous model and rules are applied on access and reproduction policies.

When there are licensing restrictions and the copyright varies (libraries and other owners, other owners only, varies on item-by-item basis), the common approach is the provision of free on-campus, some off-campus and no offsite access. Common practice shows that private reproduction is permitted under fair use provisions, and commercial reproduction is not authorized. The previous rules are applied also, when the libraries acquire born-digital content through voluntary deposition – something that happens rarely – and the copyright belongs to other owners.

On the previously presented policy model, there are some exceptions of the rules. The exceptions may be applied on three cases. First, when libraries create their own copyrighted born-digital content, the only exception-difference from the previous model is on access. Instead of providing free onsite and some offsite access, the libraries provide free onsite but prohibit offsite access.

Second, when libraries and other owners share the copyright of the licensed and/or purchased content, which is an alternative approach of the basic rule that other owners have the copyright, the exceptions refer to the private and commercial reproduction; the access follow the rule: free on-campus, some off-campus and no offsite. The private reproduction is sometimes permitted with a credit to the source and the commercial, with written permission from and fees paid to owners, whoever they are, libraries and/or other owners. Another

alternative reasonable choice is the examination of private and commercial reproduction on case-by-case basis.

Finally, when the copyright varies on item-by-item basis, the exception refers on access. Instead of following the rule of free on-campus, some off-campus and no offsite access, the libraries may provide free access for all or free for onsite and some for offsite. The private and commercial reproduction, follow the rule of fair use doctrine and prohibition, respectively.

4. Findings on Policies

From the previously presented policy model, we can derive findings on policies, which may be common on national and academic libraries or unique applied only in one category of libraries. On section 4.1, we present the common findings and on section 4.2, the unique; and we compare the national and academic policies.

4.1 Common Findings

Libraries prefer digitizing content that does not have complex copyright terms. Usually, they digitize content on which have the copyright. In addition, they hold the copyright for the digitized versions of the free conventional third-party and the public domain content. Most libraries acquire born-digital content through license and/or purchase with organizations (e.g. publishers) and individuals, but only if they will be responsible for its use.

The on-campus onsite access is always free, independent of copyright ownership and the creation type of the digital content. When the library has the copyright of the digital content, the private reproduction is usually provided free with a credit to the source (creator, author) or otherwise mostly under fair use provisions, but the commercial reproduction needs written permission and fees are charged. In addition, national and academic libraries of the USA allow private reproduction mostly by applying the fair use doctrine. The rest of them allow private reproduction with reference to the authors. When the commercial reproduction needs written permission from the owner, then fees are also paid to the owner. The commercial reproduction is authorized to onsite users only, when the library administer the copyright, with written permission from and fees paid to the library; or it is not authorized, when other owners have the copyright.

4.2 Unique Findings

The voluntary deposition is applied mostly on national libraries, which is normal because of their role as legal depositors of the conventional content. However, the national libraries have implemented practices mostly for the voluntary deposition of the offline digital content, such as microforms, CD-ROMS etc., and less for the online born-digital content, such as electronic journals, databases etc.

The legal deposit of the digital content (offline and online) is applied in few national libraries. For example, NLNZ has established such legislation, but negotiations among NLNZ and publishers are in progress, in order to give solutions on problems, such as, issues of commercial interests, formats of copies, timing for the provision of access etc.

Rarely, on national libraries and in some categories of digital content, such as CD-ROMS etc., the access, even for onsite users, is restricted due to the licensing terms. The off-campus onsite access is not applicable on national libraries, something that is applied in great

percentage on academic libraries. Academic libraries decide the provision of reproduction, private and commercial, on case-by-case basis, when there are copyright uncertainties, notwithstanding the content creation type. On the other hand, national libraries may require fee for the reproduction, not for copyright but for preservation reasons; and the copyright fee, which may be required by the copyright owner, is added to the reproduction fee. However, the practice shows, that, national libraries do not charge a reproduction fee when a copyright fee is due.

5. Conclusions and Future Work

The relationships among specific factors and knowledge management policies of the digital collections of leading national and academic digital libraries have been examined. Policies were analysed and classified; quantitative remarks were extracted and a policy model was proposed. The proposed policy model may offer solutions on the selection of policies and on the management of digital information and knowledge. The model consists of generalised rules supplemented by their exceptions and of recommendations for decision-makers or library managers in forming policies of digital libraries.

For example, the library should be responsible for the use of the licensed born-digital content, in every case, even if it is not the copyright owner; so decision makers should not acquire licensed born-digital content if they do not have control on its use. In addition, decision makers may provide private reproduction with a credit to the source or under fair use, according to the rule followed by the libraries on each geographical region. Finally, we concluded with common and unique findings on national and academic policies. From this comparison, we better explore and generalize the similarities and differences between national and academic library policies.

For future work, we should try to describe our policy model in a more formal way, e.g. by means of ontologies. In addition, we may examine more libraries and try applying statistical or data mining methods for our quantitative analysis. Finally, even if the content creation type factor diversify the policy model – this is the reason of presenting two separate for the digitized and the born-digital content, we should try to merge and simplify the two models onto one unified. Within this merge, we should try to provide more generalized policy rules and recommendations for helping decision makers or library managers in selecting easily the appropriate policies for each case. This may help them, predicting the necessary flexibility for policy implementations mechanisms, in order to apply policies that may be formed not on the beginning of a digital library, but during its use.

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