

Applying Library Policies for Digital Content Access to the Commercial Sector

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The digital content of libraries is different from commercial digital products, such as, computer applications, software tools, and computer code or data streams, but they have the same sharing, reproduction and distribution digital properties and similar knowledge management problems. We examine the policies applied to commercial and library digital content. We classify the commercial digital products, according to their use and distribution properties, and we analyze their policy components. Mapping on library and commercial sector policies is illustrated, and their similarities and differences are extracted. Within this mapping, we conclude by showing, how a subset of the library policies can be transferred and implemented by companies. We show how this implementation could be beneficial for commercial companies, because libraries have great experience in providing digital content and in implementing policies. In this sense, *libraries are leading the way*, by showing to commercial companies how to handle and provide digital content.

“Keywords”: Virtual enterprises and communities, knowledge management policies, digital content providers

1. Introduction

The digital content of libraries is different from the digital products that are commercially available, such as, computer applications, software tools, and code libraries or data streams. Nevertheless, their digital properties are the same: they are replicated with minimal cost, are easy to share and distribute, etc. Their acquisition is based on terms and conditions, set in a contract during the sale, and not in physical ownership. We observe that the policies of distributing library and other such digital content can be the same, and the commercial content providers can benefit from the variety of policies that the digital libraries are already using for their content.

Since different types of digital content face different model and copyrighting demands and challenges, we need to consider different forms of administration, management and policies. However, libraries have already implemented knowledge management policies (access, reproduction, distribution, use etc.), on their digital content, for private or commercial use. The library policies have been studied, and they can offer solutions to the management of digital information and knowledge. In this sense, *libraries are leading the way*, by showing to commercial companies how to handle and provide digital content.

The goal of this paper is to show how the library model can be extended to apply to the *commercial* (private) sector. Our thesis is that library policies can be extended and applied to physical and digital content that is shared among companies. The policies can also be tested with parameters and factors that are particular to companies. New factors arise, for example, from the type of the digital

content (e.g. computer code), the nature of companies, and the type of usage or users. Since most companies are commercial in nature and want to make profit, this, impacts on the type of policies assigned. Besides wanting to make profit, companies are also interested in building visibility, fame and exposure to their products. This means that policies interact with the forces of the marketplace. We consider how these factors diversify the policies, and we make a crucial distinction between private and commercial use, access and reproduction of the digital content.

In section 2, we make an overview of policies for the commercial and library digital content. We classify the content according to the acquisition, access, reproduction, distribution and use properties. In section 3, we discover and analyze the policy components of the commercial digital content. The policy components that we analyze are, for example, the ways that users may get the content, its duration, distribution properties, upgrade, update etc. In section 4, we map and link commercial policies to library ones. We extract findings on how subset of the library policies can be transferred and implemented by companies; and how this implementation could be beneficial for commercial companies, because libraries have great experience in providing digital content and in implementing policies. Concluding remarks are made in section 5, where also future works is illustrated; and the references are mentioned in section 6.

2. Overview of Policies on Digital Content

In this section, we analyze the knowledge management policies that already applied by the commercial companies and libraries. The digital objects that are available today and are used as products are classified into many different kinds, such as reading content (from publishers, libraries, or individuals) or computer applications, software tools, and code libraries (from software houses) or data streams (from private or public data providers), etc. Nevertheless, their digital properties are the same: they are replicated with minimal cost, are easy to share and distribute, etc. They can be searched for, they can be presented to the user in a variety of ways, depending on the environment, they are stored digitally – with the appropriate digital representations, they may have many versions, and problems for maintaining them right, etc. Their replication and possession is based on intellectual ownership, and not on physical ownership, when holding a copy of them. Because of the low cost of replication, often their copies are given freely. If they are not given freely, their acquisition is based on terms and conditions, set in a contract during the sale. The contract normally specifies how to use them, by how many users, for what purpose, what copies are allowed to make etc. However, the details that are needed for the implementation of these restrictions may also be costly to implement (e.g. management of activation keys).

Although these actions all look alike, there are many different ways to implement them, as can be seen from applications in practice. We refer to specific examples showing the diversification and the variety of policies that apply on the commercial digital content. We classify and categorize the commercial digital products, from those provided with unlimited distribution, to restricted ones that have limited distribution, due to, subscription, fee payment, activation keys, and other policies and mechanisms for enforcing distribution limitations.

Some digital objects are free and their creator permits unlimited distribution; by their creator, or other distribution channels (web sites, ftp sites, etc). For example, the *open-source software* (oss) products belong in this category of the free products with unlimited distribution. In oss products, there is unlimited access and reproduction and the companies can use them without restrictions. In addition, the computer code of oss products is freely accessible, not only for private research, study and reproduction, but, also, for its reuse in other products. For example oss, like *Greenstone* [New Zealand Digital Library Project (2000)], *Fedora* [University of Virginia (2001)], *DSpace* [MIT (2003)], allow users to reproduce them, tailored them according to their needs, extending their computer code and embedded it into other products that – not very often – may distributed

commercially. The profit for the original designers is the fame, exposure and citations that they get; more users they gain, more fame and exposure they make.

In this logic, there is the *open-access* [OSI (2001)] movement that already applied as an alternative publishing model and used on many universities and libraries, which try to become non-profit publishers, for example, university repositories, e-prints archives etc. Authors, and not users, pay for publication expenses. In practice, the publication cost is minimized, because, the only requirement for electronic publishing is infrastructure. University libraries, which suffer of the subscription costs that paying to publishers each year, prefer to pay once for the infrastructure development. On the other hand, authors retain the copyright and do not transfer it to commercial publishers, as they do in refereed journals published, for example, by *Elsevier* [(2005)], *Sage* [(2000)], *Springer* [(2000)] etc., and they get more citations, fame and exposure. In addition, on cases of pre-print archives, where authors store their pre-print versions, they get comments and annotations, which improve the final output of their work. Finally, users find the information they seek, quickly, without limitations and libraries save a great amount of money that pay for subscription, and they have the opportunity to preserve, themselves, their digital content.

Digital objects can be given as *postcardware*, asking for a mere postcard. They are actually free (as their creator makes no profit or cost compensation), and their creator wants only to keep track of their use. Similarly, other such objects are given through the Internet, by filling a free registration form. Respectively, there is library digital content, which is provided with free access and private reproduction, however, the library keep track on its use, by using cookies, watermarking (e.g. *ArchSearch* [ADS (1996A), (1996B)]) etc, in order to discover unauthorized use, such as commercial reproduction, of the content [Kilbride (2004)].

Another category is *shareware* products. The objects that are given as shareware, give their functionality to their users from the first moment, and ask their users to subscribe if they realize that they need the object, and are satisfied by its use. Therefore, the users know what they are paying for, which is normally a small fee, as the cost of marketing and distribution is very low. If they finally pay that fee, they have an official copy of the object, which they can use according to the terms in their contract, which in most cases are fixed for each object.

The users may abuse the terms, and continue using the object, after the evaluation period is over; if they continue to use the object and they decide not to buy it, then the creator may have planned one of many choices:

- Let the users to continue using the product, as before.
- To continue using the product, and getting a reminder each time to buy it (e.g. *WinZip* [WinZip Computing (2004)], *WinRar*) or having a watermarking on the copies produced with this product (*pdfFactory* [Fine Print Software (1995)]).
- To continue using the product, but the product may become a little harder to use.
- The product may lose some or all of its functionality, after the time has passed (e.g. *easyPDF* [BCL Technologies (1993)]).

Their creators do not have to find ways to prevent the users from copying the original object, as it is normally available for anyone to try, anyway. In addition, the version of the object that is given to the users without an initial payment may be either a full-fledged version of the product, or an evaluation version, with less functionality than the full version.

For example, *WinZip* [WinZip Computing (2004)] and *WinRar*, belong to the shareware category, and are freely available for an evaluation period. After this period, the user may pay in getting the official copy, however, this is not mandatory and it is not enforced. Therefore, the user decides if will or not pay for the official version and has the alternative to continue using the *WinZip* [WinZip Computing (2004)] or *WinRar* evaluation version, however, getting a reminder each time to buy it.

Another example is *pdfFactory* [Fine Print Software (1995)], where the user can download and use an evaluation version, for a trial period. Afterwards, a fee payment is necessary, for using the official version, otherwise all PDF files, which the user makes with the trial and evaluation version – e.g. conversion of documents (.doc, .ppt, .rtf etc) into PDF files –, embed, on each copy, a watermarking or the trial version. However, the user may crack the version and keep working with this, without having watermarking signs. In addition, *easyPDF* [BCL Technologies (1993)] can be downloaded for a trial period. Afterwards, the user should pay a fee, obtain a registration key and accept the licensing terms under which the product is distributed. Otherwise, the product may lose some or all of its functionality. Another interesting point is that even if the user has an official *easyPDF* version, each upgrade needs extra fee.

Another example of shareware product is the *AbsoluteFTP* [VanDyke Software (2005)], which has an evaluation version. After the trial period, the user should obtain a license key, and pay the official version, otherwise, the trial version lose its functionality. The difference on this shareware product, is on upgrade and update policy, where the user, may freely upgrade its official version for the current year that obtained the product. Afterwards, he/she should pay a fee for upgrade, which is the same policy that also followed on *easyPDF* [BCL Technologies (1993)].

There are digital products that can be bought only with payment and need an activation key to work, usually a serial number. In this category, there are much known software products (*Xara Webstyle*, *MS Office* – various editions, *MS Windows* (or *MS Win*) – various editions etc.). Some of them (e.g. *Xara Webstyle*), may provided a trial version, but for very limited period, e.g. fifteen days, and afterwards the product lose it functionality.

There are diversifications when the user buys and activates the previous category of objects:

- The object may be given easily, but will not work (satisfactorily) without the activation key.
- The activation key is given after the payment is completed (e.g. *MS Win98*, *MS Win XP*, *MS Office 97*, *MS Office XP*)
- The object needs no protection, but the activation key does.
- The activation key may be checked online, to ensure that it is not replicated into many installations (e.g. *MS Office XP*, *MS WinXP*)

For example, in *Xara Webstyle* [Xara Group Limited (2005)], the user may have a trial version for fifteen days, and after the product lose its functionality. The user must pay for the product and an activation key, serial number, is needed at the beginning of installation; without the serial number, the installation does not begin. The user may upgrade components of this software without extra payment, for a trial period of fifteen days, but if he/she wants to keep, the upgraded components activated after the trial period, he/she must pay additional fee for each upgrade and update. The access, reproduction and distribution of this product is restricted only to users that have paid, and is protected form the other users.

In addition, *MS Win98* [MS Corporation (2005B)] and *MS Office 97* [MS Corporation (2005A)] are products that require payment and then the activation key is given, which is needed for the installation. The companies that pay for these products can use them onsite, for their employees and for private use. The access is under fee payment, only for onsite users, and only for private reproduction; the commercial reproduction and redistribution is prohibited. However, in practice, the CD of the *MS Office 97* can be reproduced, using the same crack key, and given to other companies also without paying the necessary fees to *Microsoft Corporation*. This, shows, that the company cannot enforce reproduction limitations, and it is the user responsibility to respect the access and reproduction rules. This is similar on free library digital content, where, the private reproduction is permitted and the commercial is prohibited, but the user is responsible on respecting or not the fair use doctrine.

The safety of *MS Win98* and *MS Office 97* was evolved, and became stricter in newer editions, such as the *MS WinXP* [MS Corporation (2005C)] and *MS Office XP* [MS Corporation (2005A)] packages. The same limitations and rules on access and reproduction are applied to these products also, as on *MS Win 98* and *MS Office 97*, but, the safety has been improved and the reproduction requires an encrypted activation key. The activation key may be checked online, to ensure that it is not replicated into many installations. The online key check enforces the security from unauthorized distribution, and the companies have to pay the package for each employee separately and theoretically, they cannot reproduce the package for all their employees. *Microsoft Corporation*, keep track of the activation keys and use of these packages, can explore unauthorized use and may enforce punishments; at least theoretically. In practice, however, unlawful and unauthorized reproduction may be done.

The previous software products (*Xara*, *MS Win*, *MS Office*), do not contain a license for redistribution (in a product), because it is forbidden. However, other products have a license for redistribution of their computer code in new products, but with strict terms, usually the payment of a fee to the original owners.

Another category of digital products refers to those that acquired under subscription terms and fees. In this category, there are antivirus products, like *McAfee* [(2003)] or *Norton* [Symantec Corporation (1995)], where the user pays subscription for the product and gets free support and updates for a specific period, usually one year, where the subscription holds. Afterwards, either of getting support or for updating the version of the software, the user must pay additional fees. Another new flexibility, on this category of digital products, is that a volume discount may be applied.

Finally, another category of digital products refers to those that can be bought after negotiation (e.g. payment). The procedure, starts with online negotiations between seller and buyer, usually on the price, and can be failed or succeed. These objects, are not available to all, but only to the users that have paid, and are protected from the other users. For this procedure, a negotiation system, like the *Secure Content Exchange Negotiation System* – SCENS [Song (2003)], an ongoing project in the *Dartmouth Experimental Visualization Laboratory* – DEVLAB [(2000)] is necessary.

From this overview, we observe that there is a variety of policies for commercial digital content, like computer code, software tools etc. However, the same knowledge management problems, on search, access, reproduction, use etc. exist, as for the library digital content. The commercial policies have their components that are analyzed below on section 3. Finally, the variety of commercial policies can be mapped onto library policies, below on section 4, and the commercial content providers, like publishers, can benefit from the policies that the libraries have already implemented and use for their digital content.

3. Analysis of Policy Components

After the overview and classification of policies on digital products for commercial mostly and library sector, we discover and analyze briefly the commercial policies onto their components.

The first component refers to the ways that users may get the object. We have the following categories: *full-fledged version*, *evaluation copy*, and *object with activation key*. The *free* and *postcardware* software are always full-fledged versions, and are distributed freely, without restriction or fees. The *free* software has the only requirement of mentioning the source by the user. In addition, the user can reuse the code of the *free* software in other products. The original designers get fame and exposure by using this policy. The *postcardware* refers to products that are actually free, and their creator wants only to keep track of their use, or they are given through the

Internet, by filling a free registration form. *Shareware* products may be either full-fledged versions or evaluation copies. Other commercial products can be in any configuration.

The second component refers to the duration of the object, which can be unlimited, for a period, for a number of uses. Afterwards, there is the third component that refers to the action on the end of this period: *nothing, less functionality, messages to the user, no functionality and payment for the full version*. The previous actions may take place when the object is an evaluation version provided for a limited period. *Nothing* means that the user may continue using the object, as before, without any problems, e.g. to lose some or all of its functionality. *Less functionality* means that the object may lose some of its functionality. *Messages to the user* refer to the reminders that the user faces on each use, for buying the object. *No functionality* means that the object may lose all of its functionality, and the user must pay for getting the official full version.

The fourth component refers to the license that the software may use for its installation. The license may contain payment for the license key, which is necessary for the installation procedure, and terms for access, reproduction, use etc. Another significant (fifth) component is the license for redistribution: *none, for private use only, for commercial use too*. *None* means that the license does not allow any redistribution. *For private use only* means that the license allows redistribution for private use, research and study, and not for commercial purposes. *For commercial use too* means that the license allows not only the private use, but also, the commercial one, under specific terms and conditions.

The sixth component refers to the continuous payment that is needed for the upgrade and/or update of some objects, and can be *zero, or subscription, or free for period of time* etc.; the continuous payment is additional of the fee that the user has paid to acquire the objects. *Zero* means that the user does not need to pay for upgrading and/or updating reasons. *Subscription* means that the user must pay for every update and/or upgrade of the object. *Free for a period of time* means that the upgrade and/or update of the object is free for a specific subscription period. For example, *Norton Antivirus 2005* edition [Symantec Corporation (1995)], provide free upgrade of virus definitions for the year 2005, but afterwards, the user must subscribe and pay again for upgrade features. For the update of this object, e.g. to get a new version of *Norton Antivirus* [Symantec Corporation (1995)], the user must pay in any case, even if the update is circulated during the period that the user has its subscription activated. This shows, that in some objects, the upgrade policy is different from the update one; however, in other objects, differences are not apparent and the same policy applies for upgrade and update.

4. Mapping of Policy Components

In this section, we link library policies to commercial ones. We extract policy similarities between library and commercial sector by providing specific examples. We examine policy similarities between digital content commercial providers, such as, commercial publishers, bookstores, DVD-video stores, and libraries. In addition, policy similarities exist also, between conventional content providers, such as, TV and radio stations etc. and libraries.

All of them, publishers, bookstores, DVD-video stores, TV and radio stations, provide services, as the libraries provide too, and sell products as the libraries may sell too. The difference is that libraries are, most of the times, non-commercial, they can be easily extended on digital markets, and they have experience in forming and implementing policies.

We present some examples on policy similarities between libraries and companies. Libraries provide books to the users and bookstores sell books, as a product, to the users. Libraries have journals on their collection, accessible for their users, and commercial publishers provide journals, as a service, to their users. On the one hand, we have the product itself and on the other, there is the same product as a service. However, many activities of libraries constitute services. In addition,

libraries use loan and *inter-library loan* (ILL) for their users and DVD-video stores sell products to their users. The user borrows the product from the library and rents it, e.g. the DVD, from the store. In all these cases, there is provision of services.

It is interesting to examine the policy similarities between libraries and conventional content providers, in order to have a better idea on this matter. The libraries have similarities on their services with TV stations. For example, a TV station can be free to users, without subscription fees. In this case, the TV station covers its expenses from state funds. National libraries also, are free to all users and funded by the state. Other TV stations cover their expenses by using advertisement services. Many libraries of professional associations, e.g. *ACM* [(2005)], cover also parts of their expenses by advertisements. Other TV stations use subscription, as a cost model, and provide their services to limited subscribers and users. In libraries, *electronic journals* (e-journals) are provided also to limited users, which are affiliated with the library, and they pay indirectly – the library pays for them – subscription fee. Many libraries make contracts with publishers, for accessing e-journals, and they pay according to the use. For example, a contract term defines the limit of the users that can access the specific content and the cost is scalable according to the use. Similar rules apply on TV stations, which define their subscription fee according to the number of users that use their services.

On the paragraphs follow, we show how library policies can be linked with commercial ones on the terms of acquisition, intellectual property, access, reproduction and use. Usually, the acquisition of the commercial digital products is based on terms and conditions, set in a contract during the sale, and not in physical ownership, as the acquisition of the library digital content. However, there is library digital content, on which its acquisition, is based on terms set in a contract, for example, e-journals, databases etc. In addition, the acquisition of commercial digital content may be free, or under licensing terms, or based on a fee, as on library digital content.

Libraries have digital content that is free, without intellectual property restrictions. For example, public domain content, on which nobody has or claims the copyright; or free third-party content on which the owner, does not claim copyright and gives his/her permission to the library to provide it with free access. This kind of unrestricted digital content applies also to the commercial sector, for example, on computer code or oss (*DSpace* [MIT (2003)], *Fedora* [University of Virginia (2001)], *Greenstone* [New Zealand Digital Library Project (2000)] etc.), which is freely accessible and available to the user without copyright restrictions. On the other hand, library may have digital content, which is under copyright and licensing limitations, e.g. e-journals. In addition, commercial companies, e.g. *Microsoft Corporation*, provide software under copyright and licensing limitations.

There are also other examples on similarities for library and commercial content in terms of access and reproduction policies. There is library content, which is freely accessible to all users, onsite and offsite; the same applies for oss. In addition, library content which is accessible to onsite users only and restricted for offsite. The same applies in cases of software, for example with a *Microsoft dll* component, which is available only for onsite users, users of companies that have paid the software to *Microsoft Corporation* and they have obtained permission to use it on their company only.

Another access policy that applies on commercial sector is the free access, on an evaluation version, for a limited period, and then the payment of a fee. Respectively, libraries may give proportion of digital content freely, and for the other part, they may require payment of a fee. In addition, the access rights between onsite and offsite users may be different on commercial and library sector. For example, after the evaluation period, some software products lose some or all of their functionality. Onsite users that have paid the official version continue having all the available functionalities. Offsite users, loss those privileges, if they do not pay for the official version. Respectively, libraries may provide digital content with different access rights for onsite and offsite users. For example, in the *Prints Photographs Online Catalog* (PPOC) [LC (2004), (2005A), (2005B), (2005C)], onsite users access the digitized images on full resolution, and offsite users access only thumbnails, and they have to pay, for having reproduced copies with full resolution.

Finally, we observe that the evaluation copy of a digital product is the same with the sample copies that the publishers, provide on some e-journal issues.

Another access similarity is, when digital products and library digital content need subscription. For example, the user should pay subscription for acquiring *Norton Antivirus*, and needs additional subscription fee to continue updating and upgrading it. Respectively, libraries pay subscription to publishers for e-journals, and they update them by paying additional subscription fees for each year; otherwise, they lose the access rights. In these situations, access is given only to onsite users; companies pay subscription for their employees, e.g. case of *Norton Antivirus*, and libraries pay subscription for their onsite users, e.g. case of e-journals.

Cases where the installation needs activation key, such as serial number, may be mapped on cases where library users need user name and password authentication for accessing the content; e.g. off-campus access of e-journals. In both cases, the access cannot be ensured, if the users have not the necessary authentication key, either serial number or password.

Libraries provide content with free private reproduction. This content can be reproduced from the users for the purpose of private research and not for commercial reproduction purposes. The same applies on commercial digital content that is free for private reproduction purposes, for example, computer code that can be reproduced, inside company and among specific employments, for personal research and further development of the code. However, there are cases where libraries allow the commercial reproduction, but under specific terms, usually with written permission from and fees paid to the owner, either the library or any other copyright owners. Respectively, companies provide software for commercial reproduction. For example, computer code that can be reused and embedded in other products, but always under licensing terms, usually subscription and payment to the original owner, the company that produces the code.

5. Conclusions and Future Work

We extracted policy similarities between the library and commercial sector. The similarities refer to the acquisition and intellectual property factors, to access and reproduction policies, and general to the use of digital content provided other from libraries or from commercial companies. We extract policies that apply to the library and commercial sector too. For example, free access, onsite access only, free private reproduction and no commercial reproduction, commercial reproduction under specific terms, for reuse, redistribution in other products etc.

We classified and analyzed the policies of commercial and library sector. We discovered and analyzed the policy components of the commercial digital content. We mapped and linked commercial and library policies and policy components. We concluded that subset of library policies can be transferred and implemented by the commercial sector. We show how commercial content providers and companies may benefit from this transition and implementation. Finally, we concluded that *libraries are leading the way*, in the sense that can help commercial companies on how to handle and provide their digital content.

For future work, it would be interesting to examine more digital products, which may have more diversified policies. In addition, we should try to propose a policy model for commercial digital products that will contain generalized rules, and will help decision-makers of companies to select policies. It would be interesting to try comparing the commercial policy model with the one that we have already proposed for libraries.

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