

# Handbook of Research on Managing Intellectual Property in Digital Libraries

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# Chapter 1

## Social Bookmarking in Digital Libraries: Intellectual Property Rights Implications

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### **ABSTRACT**

*This chapter elucidates the concept of social bookmarking, its benefits in digital libraries as well as the implications of its use on the intellectual property rights of the creators of the bookmarked works. The author concludes that digital libraries can use social bookmarking as a means of increasing access to and sharing of information resources; improve web searching; as well as to enhance collaboration in the creation and use of information. Since social bookmarks are, by and large, public descriptions of and pointers to the original resources, digital libraries do not infringe the intellectual property rights of their creators. Nonetheless, the libraries should watch against copying large volumes of content from the original resource as this may be construed as an intellectual competition with the bookmarked resource. Digital libraries are advised to develop and apply social bookmarking policies to streamline their use of social bookmarks.*

### **INTRODUCTION**

Web 2.0 is truly a social web. This is largely because it facilitates extensive user participation in the identification, creation, sharing and use of information. Its architecture encourages and facilitates user contribution, collective intelligence, crowdsourcing, remixing and re-use of content, customer-centricity, creation of user communities as well as the empowerment and ownership of content and relationships (Barsky & Purdon, 2006). Web 2.0 is also about democracy; users generating content rather than merely consuming it; open programming enabling everyone to participate; as well as interfaces which make information seeking and use not only easy but also exciting. Web 2.0 has given immense power to the web users. Indeed, it is described as the users' web where they set rules and control content.

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Musser and O'Reilly (2007) identify the primary drivers of Web 2.0 as: 1) globalisation and the need to reach customers worldwide; 2) increased 24/7 connectivity making the Internet an essential part of the basic necessities of life for many people, even in developing countries; 3) growth of the accessibility of the Internet enabling customers to remain connected everywhere they go and to expect services on the move; 4) deepening of digital interactions and transactions in which customers are now not just connected but engaged – contributing content and transacting business; and 5) transformation of the web to become a business facilitator enabling enterprises to reach more clients and generate more revenue. Arakji *et al.* (2009) assert that Web 2.0 users participate and contribute to various types of online communities ranging from posting opinions for discussion groups, providing technical advice, posting ratings for collaborative recommendations, sharing digital files on peer-to-peer networks, and developing code for open source software projects.

According to Bates (2007) the basic assumptions about finding information have changed. She argues that while librarians are accustomed to consulting traditional library resources such as the catalogue, a database or even a book, the younger generations including Generation Xers and Millennials assume that any information they need is available somewhere on the web. She further asserts that these same information consumers consider the Internet to be “collaborative and interactive rather than static”. Consequently, she submits that this attitude should be recognised by information professionals who must now shift their information seeking sphere from the traditional to the context of this Web 2.0 world.

One of the services facilitated by Web 2.0 platforms is social bookmarking. Although it is a relatively recent phenomenon (emerging only in the mid 1990s), it has demonstrated a great potential in enhancing web information management. Its popularity continues to grow by the day because it has provided a new platform for information organisation, discovery and sharing. For a long time search engines, for instance, have relied on three categories of content to describe data. These are page content, link structure and query or click-through log data (Heymann, Koutrika & Garcia-Molina, 2008). Now, however, there is a fourth type of data in the form of user-generated content which has emerged strongly as a source of web page description data. Social bookmarking is one of the services which generate this fourth type of data. Social bookmarking technology allows users to store, organise, and share their documents on various websites thereby giving the users the opportunity to express their own perspectives on information and resources through informal organisational structures (Mu, 2008). Social bookmarking enables users to save links to web documents for later use without having to save the actual documents or the links in the browser. Thus, one's bookmarks are online and can be accessed from any location or device with an Internet connection (Arakji *et al.*, 2009). Wetzker *et al.* (2008) emphasises that the social aspect of these services is derived from the fact that resources (usually web pages) are tagged by the community as a whole and not only by the creator of content alone.

Just like the case is with many emerging concepts, it is not easy to define social bookmarking. Users and scholars define it differently depending on their contexts. For instance, Noll and Meinel (2007) define it as an online service which enables users of web documents to add, annotate, edit, save and share bookmarks of online resources. Barsky and Purdon (2006) define social bookmarking as the process and techniques of classifying resources by the use of informally-assigned and user-defined keywords. They add that using social bookmarking tools, the users are able to collect their favourite resources in an online, open environment from which others are free to access, read and use the same. This enhances the identification, access, use and sharing of valuable information resources. It is the process of organising information, categorising resources using keywords and sharing the information on a public network. Thus, it is a means of navigating the increasingly overloaded web-based information universe. It is a means of let-

ting one's acquaintances and other Internet users to know that one has found a valuable web resource which may be of interest to the others as well. According to Heymann, Koutrika and Garcia-Molina (2008), bookmarks are useful in two ways: 1) they facilitate a user to remember or recall the URLs of web resources visited; and 2) they guide users to valuable online content. Therefore, social bookmarking is a way of storing, managing and sharing bookmarks of web resources using self-assigned keywords and tags. The goal of social bookmarking is preservation and sharing of links to web resources. Redden (2010) explains that social bookmarking is the practice of Internet users to identify and label web pages for later use which has become a popular way for individuals to organise and share online resources. Social bookmarking is a phrase generally used interchangeably with social tagging. Social bookmarking could, therefore, be construed as the process through which users identify sites of interest while social tagging is the method by which users classify or categorise the bookmarked sites to enhance retrievability. However, in the context of this chapter, the two terms are considered synonymous.

Arajki *et al.* (2009) explain that contribution to the public pool of bookmarks is either circumstantial or motivational. They explain that circumstantial contribution takes place when a user bookmarks resources for his/her personal use but unintentionally makes them public. If bookmarks are public by default, whenever users are unaware of the private bookmarking option or are unwilling to take the extra step of designating bookmarks as private, personal bookmarks automatically feeds into the public pool. Arajki *et al.* (2009) add that circumstantial public contribution is, therefore, a by-product of bookmarking for one's own benefit. Motivational contribution, on the other hand, occurs whenever a user intentionally bookmarks resources that are not necessarily of interest to him but for the benefit of the bookmarking community. Concerning the users' bookmarking behaviour, Du *et al.* (2009) explain that social bookmarking is chaotic, unstructured, and imprecise because the collection of tags depends on each individual's personal preference and level of knowledge. This view corroborates Kipp (2007) that social bookmark users often appear to want to store more than just the subject of the documents they bookmark. For instance, they express an emotional connection to the document and attach personal information to the documents. Similarly Golder and Huberman (2006) found that there is no strong connection between the length of the user account's existence and the number of days the user takes to create one or more bookmarks. They also argued that the number of bookmarks created by users has very little association with the number of tags used in each bookmark as well. However, a user's tagging behaviour could possibly be used to reflect his or her development of interests. For instance, as a tag grows steadily over time, it might indicate the user's continual interest in that particular subject. On the other hand, if one tag suddenly grows rapidly, it might reveal the user's newfound interest.

Social bookmarking is contrasted with semantic bookmarking which has arisen from the concept of Web 3.0, the semantic web. The emergence of Web 3.0 has been influenced by several initiatives seeking to make the web better. Marshall and Shipman (2003) suggest that most of the efforts have been influenced by the need to organise the web which was perceived as being in a state of disorder; maturity of the concept of Artificial Intelligence; and the desire to transfer the burden of solving the problem of information overload on the web to computers. There are reservations, however, about the actual potential of the semantic web, with some scholars pointing out that some of its goals may not be realistic and may just remain as pipe-dreams (Priss, 2002; Marshall and Shipman, 2003). Nonetheless, Braun, Schora and Zacharias (2009) define semantic bookmarking as a tagging process which facilitates the annotation of resources with tags extended by semantic definitions and descriptions. They add that it is similar to social bookmarking except for the fact that the tags used are pre-determined. Thus, semantic bookmarking seeks to solve common folksonomy problems such as polysemy, synonymy, homonymy,

diverse lexical forms, varying spellings and a lack of commonly agreed meaning of terms. The proponents of semantic bookmarking argue that it leads to better retrieval of information, better use of annotation and better quality assurance.

This chapter, however, is focused social bookmarking. It traces the history and development of the concept of social bookmarking; its characterisation in terms of common social bookmarking features; application of social bookmarking in the organisation, discovery and sharing of online information resources in the context of digital libraries; the benefits, challenges and abuse of social bookmarking; the common social bookmarking tools; and the implications of social bookmarking on intellectual property rights in digital library contexts. The author hopes that this chapter will contribute to the ongoing discourses on how best to use emerging techno-based Web 2.0 approaches to information management without infringing the rights of creators of works.

## **SOCIAL BOOKMARKING TOOLS**

As mentioned earlier, social bookmarking is a relatively new concept. It emerged in April 1996 with the creation of the web site itList.com (Chudasama, 2007; Kulkarni, 2013). This site pioneered the concept of shared bookmarks. Of course prior to this, bookmarks could be saved as favourites and used from web browsers. However, this restricted their access and use since such bookmarks could only be used on the computers where they had been saved. Thus, they were browser-specific and there was no way of sharing them freely. In spite of its potential usefulness, bookmarking did not attract meaningful attention for several years. However, a milestone was achieved in 2003 with the emergence of the social bookmarking tool known as del.icio.us.com. It is on this system that the term “social bookmarking” was introduced to the web information management lexicon.

Del.icio.us also introduced the concept of tagging which is a process of adding metadata to a document (Noll & Meinel, 2007). Nations (2017) explains that a tag is a keyword or phrase used to group a collection of content together or to assign a piece of content to a specific person. He adds that it is assigning a keyword or phrase that describes the theme of a group of articles, photos, videos, or other types of media files as a way of organising them to facilitate easy access later on. Ordinarily, this involves annotating documents with a flat and unstructured list of keywords known as “tags”. Users of bookmarks identify them by searching the “tag-clouds” which are hyperlinked collections of the most used tags. A tag can also be used to assign a piece of content to another user. This type of tagging is essential for drawing the attention of people to specific resources or information and stimulating conversations on the subject or object. Therefore tagging not only creates linkages; it also enhances the visibility and use of information resources.

Due to the success of del.icio.us, several social bookmarking tools emerged thereafter. Some of the tools include Connotea, CiteULike, 2collab, StumbleUpon, BibSonomy, Diigo, Google Bookmarks, Pearltrees, Pocket, Reddit, SiteBar, Furl, Spurl, LibMarks, Simpy and Xmarks, among many others. The general features and functionalities of social bookmarking tools vary greatly. However, Estelles *et al.* (2010) explain that social bookmarking tools essentially allow users to store, classify, organise, describe, and share links to interesting web sites, blogs, pictures, wikis, videos, and podcasts, among others. They also guarantee access from any site to the conventional container of the “favourite” links, as well as the possibility to share them with other like-minded users. According to Redden (2010), social bookmarking tools in the academic contexts can have several purposes including organising and categorising web pages

## ***Social Bookmarking in Digital Libraries***

for efficient retrieval; keeping tagged pages accessible from any networked computer; sharing needed or desired resources with other users; integrating new social software tools and mashups to access tagged pages with Really Simple Syndication (RSS) feeds, cell phones and other portable devices for increased mobility; enabling librarians and instructors to follow the students' progress; and providing the users an additional way to collaborate with each other and make collective discoveries. Redden (2010) adds that social bookmarking can also be used to facilitate interaction and professional development among academic librarians and faculty.

## **CHARACTERISATION OF SOCIAL BOOKMARKING TOOLS**

Social bookmarking sites have successfully acquired millions of online users in the recent years. Similarly, they have continued to advance in tandem with the general web development trends. Some of the features the systems have added over time include sharing of bookmarks (as explained earlier), backing up of bookmarks as well as descriptions of bookmarks in the form of comments, votes (ranking) and tags. For instance, users can ask questions or make comments to which members of their communities can respond thus creating a conversation. The other key features common to most social bookmarking tools are:

- Social bookmarking tools do not save the actual resources. They only save the bookmarks that reference the resources (Golder & Huberman, 2006). The advantage of this feature is that bookmarks are not restricted to specific devices or browsers. They can therefore be accessed from any device with an Internet connection. It also implies that users can access the updated copies of the resources from remote locations. The disadvantage of this feature is that users may fail to access bookmarked resources if their location changes leading to broken links.
- Social bookmarks are generally public but may be saved and shared privately within communities. This implies that bookmarks have the potential to be accessed and shared by many people thereby increasing their reach. Thus, they also increase the accessibility and reach of the bookmarked resources. Nonetheless, users who wish to keep their bookmarks private can restrict their access to suit their preferences and/or interests.
- Social bookmarks can be arranged chronologically or by categories (themes). The creators, and by extension the users, determine the structure of bookmarks. The arrangement style adopted depends on the creator/user interests. For instance, time-bound resources are better arranged chronologically. Similarly, the users interested in categories of topics of the resources bookmarked would arrange the bookmarks thematically. The choice of the tools to use for bookmarking would be based on the type of arrangement adopted.
- Social bookmarks are developed using informal tags rather than the traditional keywords. The advantage of this feature is that it gives the users the leeway to describe their bookmarks and resources using their own vocabulary which are meaningful to their communities than being forced to adopt a standard lexicon which may not be appropriate or understandable in their natural use. These tags normally result in folksonomies as opposed to taxonomies. According to Dye (2006), the term folksonomy came from the words taxonomy and folk. It is used to describe the growing phenomenon of users collaboratively creating and managing metadata by tagging pieces of digital information with their own searchable keywords.

- Most social bookmarking tools provide web feeds of the bookmarks which enable the users to get to know of new bookmarks as they are saved, shared or tagged by other users. This helps to market new or recently re-discovered resources. Thus, bookmark users do not have to keep checking the sites to discover new resources. This saves the users' time while still keeping them abreast of the changes in bookmarks of interest. Given the rapid growth in the volume and variety of bookmarks, these feeds enhance the discoverability and use of bookmarks.
- Some bookmarking systems have features for rating and comments. This is one of the most important features of Web 2.0 platforms. Rating or commenting on bookmarks help the users to determine the usability of the resources based on the experience of their friends or acquaintances. Although rating may not necessarily be a pointer to the quality of the resource, it is an important pointer to their relevance and/or usability. The major disadvantage of this relates to the negative impact of swarm intelligence where individual users trust their peers just because they are members of their communities without due regard to the quality of their input.
- Some bookmarking systems have features for exporting and importing bookmarks. This enhances the portability of the bookmarks. Greater portability means greater interoperability and expanded access. These systems overcome the limitations of proprietary applications and platforms.
- Social bookmarks are created by people; not search engine programs or spiders. Thus, the content is built from bottom-up by common people, like the users, making it user-friendlier than traditional content. This implies that the content is richer. Human beings will create and share bookmarks based on myriad criteria one of which is personal experience with the resource. Search engines may not be able to infuse experiential knowledge in the bookmarks. Again, human beings can be corrected by other human beings thereby enhancing the quality of the knowledge or resources shared. In the contrary, computer programs are fairly rigid and limited by the imaginations and instructions of their original author(s). Nonetheless, human beings can intentionally or unintentionally repeat lies to the extent that they are believed by their peers. A good example is the steadily emerging concept of fake news where people create and share false news. It has become difficult to distinguish false from factual news. This may also be replicated in social bookmarking.
- Social bookmarking systems can also rank sources based on how many times they have been bookmarked by the users. The main advantage of this feature is that it relies on the frequency of bookmarking to assess the quality or relevance of the resources. Thus, frequently bookmarked resources (perceived as high quality) get used even more as the less relevant resources are pushed to the background and eclipsed through some sort of natural selection. However, one of the disadvantages of this approach is that it discourages discoverability of resources and serendipitous learning. It may also result in the creation and sustenance of echo chambers defined by the boundaries of the social communities where old ideas are regurgitated at the expense of new ideas.

## **SOCIAL BOOKMARKING IN DIGITAL LIBRARIES**

A digital library is a library where the collection is processed and stored in digital formats. This facilitates electronic searching and retrieval of the collection through digital devices such as computers. Digital libraries are sometimes described as 'paperless,' 'virtual,' 'library without walls,' 'electronic library,' and 'bionic library', among other names (Harter, 1996). Although some scholars also describe digital libraries as those libraries which have more digital collections than physical ones, others assert that digital



## **Social Bookmarking in Digital Libraries**

libraries only offer services electronically; they are virtual and do not have a physical presence. Some literature also reveals the common understanding that most digital libraries contain highly specialised collections. It is also evident that digital libraries do not stock all the information resources locally but often collaborate with content producers to facilitate online access (Harter, 1996; Leiner, 1998; Levy & Marshall, 1994; Miksa & Doty, 1994; Prasad & Swarnalatha, 2005).

Baohua *et al.* (2002) also suggest that the digital library is a major transformation of the traditional library model. They explain that this transformation is evident in the transition of the traditional libraries from passive to active use; from direct to indirect service; from providing information ‘blindly’ to selective and accurate dissemination of information; and the provision of ‘rich’ collections whose quality is enhanced through mixing and remixing by different collaborators such as librarians and users at various levels. Singh (2003) emphasises that the digital library is more about the digital service environment than the digital content. He asserts that this environment brings together digital collections, people and services that support information processing and sharing. Prasad and Swarnalatha (2005), on their part describe digital libraries as organisations that provide the resources, including the specialised staff, to select and organise; offer intellectual access; interpret, distribute, preserve integrity; and ensure the persistence over time, of collections of digital works so that they are readily and economically available for use by a defined community. Baohua *et al.* (2002) identify the major characteristics of the digital library as: (1) the digitisation of the information resources making them more durable and easily sharable; (2) digital information transfer through communication technologies such as the Internet; (3) limitless potential to share information across physical boundaries; (4) focus on knowledge and not just information resources; and (5) fast speed of service delivery. Singh (2003) also adds that digital libraries (1) have a higher variety of information resources; (2) provide localised access to distributed content; (3) enable the same information resource to be shared by many people simultaneously; (4) have shifted paradigms from collection ownership to mere access; (5) emphasise quality and usefulness of collection as opposed to quantity; and (6) presuppose the absence of human intermediaries. The major benefits of digital libraries discernible from the literature reviewed (Amrelia *et al.*, 2005; Baohua *et al.*, 2002; Harter, 1996; Lagoze *et al.*, 2005; Leiner, 1998; Singh, 2003) include no physical boundary; round the clock availability; multiple access points to services and collection; user-friendly interfaces; longevity of documents; cost effective use of space; and value addition to services and collection.

Digital libraries use social bookmarking as a means of increasing access to and sharing of information resources (Rethlefsen, 2007); improving web searching; as well as to enhancing collaboration in the creation and use of information. Digital libraries do this by integrating social bookmarking resources to their bibliographic tools such as open public access catalogues (OPACs) to facilitate tag-based browsing as well as resource recommendations, ratings and reviews. Digital libraries can also integrate tagging sites with library services. Redden (2009) explains that by utilising social bookmarking, librarians can identify a variety of relevant information in numerous formats that supports the users’ individual learning styles. She adds that social tagging provides an advantage over spiders and search engines that do not have the human capability to conceptually ascertain a web page’s subject. Librarians are able to qualitatively identify and tag pages according to subject or related topic, even if the subject term(s) are not on the page. For this reason, she argues, social tagging sites could have an advantage over search engines since users have combed through web pages and labelled them based on their own subject analysis and academic purposes. Digital libraries can also create Internet subject guides; as well as enhance knowledge classification and identification by allowing users to tag their favourite materials in the library collection and allowing other users to utilise these tags. Digital librarians can also use social bookmarking sites to not

only share helpful web sites but can also enhance reference services both inside and outside the library. In academic digital library setting, Redden (2009) suggests that social tagging can strategically benefit undergraduate library users through bibliographic instruction and reference in support of institutional programmes and curricula. This can be achieved through the use of online subject and research guides and pathfinders. She adds that academic librarians can use social tagging conceptually to emphasise information literacy and to become more approachable and accessible to users by incorporating other Web 2.0 concepts such as blogging, online chatting, online networking, and other mashups.

Digital libraries can accrue diverse benefits from the use of social bookmarking. As Barsky and Purdon (2006) explain, social bookmarking tools are excellent in information resource discovery. Arakji *et al.* (2009) concur and explain that when searching for information online, a user benefits greatly by seeing the web resources persons with similar information interests have identified and marked as favourites based on their information value. Apart from enhancing discoverability of resources as explained earlier, social bookmarking enables users to create communities of interest from which they can generate new knowledge; increases traffic to information resources by improving their discoverability and use; since social bookmarks are stored on specialised sites on the web, they are portable and cost effective by saving on costs associated with storage of documents; social bookmarks can be integrated to other resources or systems on the Internet thus increasing their functionality and access; social bookmarks provide a free means of creating back-links thus increasing the ranking of bookmarked web sites; users of digital libraries using social bookmarks are able to find content which has not been indexed by search engines from bookmarks; social bookmarking ranks resources according to the number of times they have been bookmarked by the users and not the number of external links into it as applied by search engines; social bookmarking enables specific users to personalise the content by personalising the tags; as well as users can follow other users to see and use what they are bookmarking. Furthermore, Keith (2007) avers that social bookmarking technology supports information literacy practices that encourage the social construction and sharing of knowledge. Mu (2008) argues that bookmarks easily provide RSS feeds that enable users to become aware of new titles as they are saved, shared, and tagged by other users while Wetzker *et al.* (2008) assert that social bookmarking systems also provide a promising source for the detection of trends. Thus, the greatest advantages of social bookmarking tools are the ability to store references and share them within a community, access them anywhere and on any computer or any other digital device, and stay current by monitoring what is being added to the sites and what others are reading on a topic (Mu, 2008). Wetzker *et al.* (2008) conclude that social bookmarking provides a valuable source for information retrieval and social data examination.

In spite of the many benefits of using social bookmarking, digital libraries are likely to face several challenges in the adoption of social bookmarking to enhance information identification, access and sharing. Arakji *et al.* (2009) explain that one of the greatest challenges of social bookmarking sites is the fact that they do not use standard keywords. As explained earlier, they use folksonomy generated collectively by the users. By tagging the papers they post, users are building a domain-specific folksonomy that describes the paper they are bookmarking in terms that are meaningful to themselves and usually other specialist researchers (Emamy & Cameron, 2007). The use of keywords which are specific to user communities may limit the use of the bookmarks by other communities or between different groups in the same community. Similarly, keywords and tags may overlap making it difficult for users to distinguish resources (Heymann, Koutrika & Garcia-Molina, 2008). Again, social bookmarking, just like other systems anchored on direct user participation, is vulnerable to manipulation, collusion, corruption, and/or spamming. Individual users or creators of bookmarks may manipulate the bookmarks for personal

## ***Social Bookmarking in Digital Libraries***

reasons thus jeopardising the accuracy or value of the bookmarks. Another challenge emanates from the fact that social bookmarking is generally done by amateurs. Therefore, some bookmarks may not be accurate given that there is no oversight on how the bookmarks are organised or tagged. Such bookmarks may never be found or may not provide meaningful value to the digital library users. Another challenge relates to the fact that just like any other cloud-based services, social bookmarking sites are remote. Creators or users of bookmarks stored in the cloud have less control over them and may not access them at will. Other challenges may emanate from mis-tagging, for instance, through spelling errors; skewed perspectives and biases of the bookmark creators which may mislead bookmark users; and spamming bookmarks leading to infobesity.

## **SOCIAL BOOKMARKING AND INTELLECTUAL PROPERTY RIGHTS**

According to Scheirer (2011), social media present a number of challenges to intellectual property law that had not been witnessed before. This is in spite of the fact that the same rules, legislation, and common law rights exist for those who own intellectual property. She suggests that the sheer volume of material being published on the Internet, the speed at which the material can be transmitted, and the vast number of individuals who can be reached by the material create challenges for owners of intellectual property rights which were never known before. She also argues that this situation raises serious concerns for the users of social media who can be exposed, unwittingly or otherwise, to liability for breach of intellectual property rights. This section discusses intellectual property rights relevant to social bookmarking and how they affect the use of social bookmarking tools in digital libraries.

### **What Is Intellectual Property?**

According to the World Intellectual Property Organisation (WIPO), intellectual property refers to creations of the mind: inventions; literary and artistic works; as well as symbols, names and images used in commerce. Intellectual property is divided into two categories: 1) industrial property which includes patents for inventions, trademarks, industrial designs and geographical indications; and 2) copyright which covers literary works (such as novels, poems and plays), films, music, artistic works such as drawings, paintings, photographs and sculptures as well as architectural design. The rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television programs. WIPO further explains that intellectual property rights allow creators, or owners, of patents, trademarks or copyrighted works to benefit from their own work or investment in a creation. These rights are outlined in Article 27 of the Universal Declaration of Human Rights, which provides for the right to benefit from the protection of moral and material interests resulting from authorship of scientific, literary or artistic productions (WIPO, 2006). Whereas, it is not entirely impossible to encounter intellectual property rights issues relating to industrial property when using social bookmarking to create or share bookmarks, copyright is the intellectual property right digital libraries are most likely to experience with social bookmarking. This view is supported by Scheirer (2011) who posits that copyright is the most high-profile intellectual property with implications for social media. She further explains that the plethora of cases that have arisen around the world show that so-called “user-generated content” is not the same thing as “user-created content.” She argues that content exchanged between individuals online is not always “content generated by a user” but, rather,

content created by a copyright holder who has not authorised its generation by the user. In other words, the publication of such content in social media constitutes a breach of the holder's copyright.

WIPO (2006) explains that copyright laws generally grant authors, artists, and other creators of creative works the protection for their literary and artistic creations. As explained earlier, copyright laws also provide "related rights" or "rights related to copyright" that encompass rights similar or identical to those of copyright, although sometimes more limited and of shorter duration. Works covered by copyright include, but are not limited to: novels, poems, plays, reference works, newspapers, advertisements, computer programs, databases, films, musical compositions, choreography, paintings, drawings, photographs, sculpture, architecture, maps and technical drawings. WIPO (2006) also explains that the creators of works protected by copyright, and their heirs and successors (generally referred to as "right holders"), have certain basic rights under copyright law. They hold the exclusive right to use or authorise others to use the work on agreed terms. The right holder(s) of a work can authorise or prohibit: its reproduction in all forms, including print form and sound recording; its public performance and communication to the public; its broadcasting; its translation into other languages; and its adaptation, such as from a novel to a screenplay for a film. Similar rights of, among others, fixation (recording) and reproduction are granted under related rights. Many types of works protected under the laws of copyright and related rights require mass distribution, communication and financial investment for their successful dissemination (for example, publications, sound recordings and films). Therefore, creators often transfer these rights to companies better able to develop and market the works in return for compensation in the form of payments and/or royalties. The economic rights relating to copyright are of a limited duration – as provided for in the relevant WIPO treaties – beginning with the creation and fixation of the work, and lasting for not less than 50 years after the creator's death. Copyright and the protection of performers also include moral rights, meaning the right to claim authorship of a work, and the right to oppose changes to the work that could harm the creator's reputation.

### **Can Social Bookmarking Infringe Copyright?**

Social bookmarking is about bookmarks. To put this matter into perspective, let's examine what a bookmark is. In the context of this chapter, a bookmark is a record about a web resource which is created by a user to facilitate easy access of the resource in future. Therefore, a bookmark is a form of shortcut to the resource saved by a user to enable quick access of the resource later on. This record typically has the title of the resource, comments about its usability, tagging of the people who may find the resource useful and, importantly, a hyperlink to the location of the resource. It is also important to note, as explained earlier, that bookmarks are generally public although some may be private.

The main parties involved in social bookmarking are the creators of the bookmarks and their followers who may also modify or share the bookmarks; the owners of the bookmarking software facilitating the creation, storage and sharing of bookmarks; and the owners of the information resources being bookmarked. The fact that the owners of the bookmarked information resources enjoy copyright protection is not in doubt. On whether bookmark creators and sharers have intellectual property stake can be determined by ascertaining whether bookmarking in and of itself is a creative activity as well as whether a bookmark is a work which qualifies for copyright protection. The issue gets even more complicated when one considers bookmarks which are collaboratively created. If at all social bookmarks are creative works, who should claim intellectual property rights? Would these be the original creators? Or would

## **Social Bookmarking in Digital Libraries**

each contributor claim a right to their contribution only? Does a contribution to a social bookmark constitute creativity?

According to the United States Copyright Office (2012), copyright protects the original works of authorship which are fixed in a tangible form of expression. The fixation, however, need not be directly perceptible so long as it may be communicated with the aid of a machine or device. Therefore, bookmarks can be protected by copyright as literary works. Sangal (2009) explains that the term “literary works” is not confined to works of literature in the commonly understood sense, but must be taken to include all works expressed in writing, no matter whether they have literary merit. Thus, the definition is not exhaustive and all literary works satisfying the criterion of originality are entitled to protection under the copyright. She adds that adaptations and abridgements of original works also qualify for protection as original works having independent copyrights. However, copyright in an adaptive work is subordinate to the rights in the original work.

Can bookmarks be considered as “literary works” under copyright protection? Yes. Some people may argue that bookmarks, especially the hyperlinks, are facts which are not protected under copyright. However, it is important to note that the compilation of facts is copyrightable. In *Burlington Home Shopping Pvt Ltd v Rajneesh Chibber* (cited by Sangal, 2009), a mail order service company developed a customer database which the defendant used to establish relationships with the plaintiff’s customers. The court held that a “compilation of addresses developed by anyone by devoting time, money, labour and skill to the sources amounts to a ‘literary work’, wherein the author has copyright”. Accordingly, the use of the database by the defendant was considered to be an infringement. Maggon (2006) also argues that databases are defined under copyright as compilations of data and other materials which by reason of the selection or other arrangements of their contents constitute intellectual creations. As stated earlier, bookmarks contain comments, tags, ratings, recommendations and hyperlinks. The creators of bookmarks apply intellectual skills, labour and other resources to select information resources to bookmark. They also transform the factual information about the resources by adding their own comments, tags and recommendations as a means of transforming the same to be more useful. Therefore, bookmarks are protected under copyright as creative literary works. This implies that bookmarks should not be used without the permission of the copyright owners. However, social bookmarks, the subject of this chapter, are generally public. Such bookmarks can be considered as public domain resources which are not protected under copyright. Thus, by making their bookmarks public, when they have the option and means to make them private, the owners of social bookmarks waive their intellectual property rights. Thus, the collection, use, sharing or storage of social bookmarks is typically not an infringement of the copyright of their creators. Nonetheless, digital libraries need to confirm the legal status, whether public or private, of the bookmarks before using them. They should also advise their patrons accordingly.

As mentioned earlier, the fact that social bookmarks are created collectively by different people complicates the copyright consideration of the works. In such cases, the ownership of the copyright of the bookmark is fuzzy. It is not possible to assign it to the original creator alone when other people have contributed to the bookmark either by commenting, rating or recommending the resource. Given that the bookmark is shared as a whole – with all the contributions – it is not possible for each contributor to claim the right to their own contribution because it is mixed with those of others. Furthermore, it may also not be easy to assume that all contributions are literary and therefore qualify for protection. Because it is not possible to answer these questions conclusively, digital libraries are advised to treat public social bookmarks as single works of the original the original creators. It is expected that these issues will get clearer with time. Therefore, libraries can change this position when the issues become clearer with time.

The other important issue to consider is whether social bookmarking infringes the copyright of the authors of the bookmarked resources. This author agrees with Hanna (2013) who argues that social bookmarking is not an infringement of copyright. He explains that social bookmarking sites only provide platforms for people with similar interests to share links to resources owned by third parties that they consider valuable. He underscores the fact that social bookmarking sites do not host any of the third party materials. They merely provide links to the materials, whether copyrighted or not. Thus, the bookmarking sites act as mere gateways to the materials which remain in their original locations and form. Digital libraries should therefore not hesitate to bookmark resources protected by copyright.

### **Landmark Court Cases Relevant to Social Bookmarking**

Most of the reported infringement cases are in the United States of America. This is largely attributed to the high levels of social media literacy in the country. Similarly, there are many companies offering products and services on social media in America. Furthermore, Americans are aware of their rights and do not hesitate to seek legal redress when any of these rights is violated. Scheirer (2011) corroborates the finding that most cases relating to social media copyright issues. She further reports that even in Canada, court decisions of any kind relating to intellectual property in the context of social media are few and far between.

Hanna (2013) cites a legal case in the United States of America in which Flava Works, a gay porn production company, sued myVidster, a social bookmarking site, after discovering that the latter's users were sharing links of websites that host illegal copies of its copyrighted videos thereby passing Flava's pay wall and thus reducing their income. During trial, a district judge granted a preliminary injunction in favour of Flava Works after finding that myVidster's social bookmarking operation made them an infringer's accomplice. An appeals court, however, vacated the preliminary injunction because it held that myVidster merely provided information and that, without more, this was not evidence of direct or contributory infringement. The judges argued that the Copyright Act makes it unlawful to perform, transmit or otherwise communicate a performance of the copyrighted work to the public. The judges compared the role of myVidster to a newspaper listing plays and giving the name and address of the theatres where they are being performed and concluded that such a newspaper is not performing the plays. It is not transmitting or communicating them. Similarly, myVidster, like the newspaper, is merely disseminating the name and address of websites that host, inter alia, Flava's videos. Accordingly, because myVidster is not actually transmitting, performing, or communicating Flava's videos on its website, its operation did not amount to direct infringement. Hanna (2013) reports that the appeal judges also held that myVidster was not liable of contributory infringement because contributory infringement is personal conduct that encourages or assists the infringement. The judges found that myVidster only gave web surfers the hyperlinks to where they can find free Flava videos but found no indication that myVidster encouraged or assisted its users to copy or distribute Flava's videos. They reasoned that someone who uses one of those addresses to bypass Flava's pay wall and watch a copyrighted video for free is no more a copyright infringer than if he had sneaked into a movie theatre and watched a copyrighted movie without buying a ticket. Essentially, websites like myVidster are not contributory infringers because their operation's purpose, to provide information, does not amount to or facilitate infringement. The infringers in this case are the persons who upload and host illegal copies of Flava's material.

In a widely reported related case pitting Perfect 10 Inc. against Google, the former which is an adult entertainment magazine accused Google of secondary copyright infringement because Google crawled,

## **Social Bookmarking in Digital Libraries**

indexed and cached third party web sites which contained infringing copies of images obtained from Perfect 10's subscription-only sections. The company also complained against Google's practice of including thumbnail copies of images that are being searched by users of its image search service to enable the users to assess what the images looked like before accessing the original image from Perfect 10's web site. It also emerged that when a user selects an image from a Google search results, a new page is accessed that includes the original website as well as a frame that contains information about the image and the thumbnail version of the image. Importantly, Google did not store or physically transmit the full images, only their thumbnails. Perfect 10 believed the linking constituted instances of secondary copyright infringement while the caching and thumbnails constituted direct infringement. A series of court cases followed. In the cases, Perfect 10 asserted various copyright and trademark infringement claims, including direct, contributory, and vicarious copyright infringement. A district court ruled that Google's thumbnail images were likely to be found to be infringing while the hyperlinks to infringing sites were not likely to be found infringing in and of themselves. Google appealed the injunction against them while Perfect 10 appealed the decision on the hyperlinks. An appellate court upheld the district court's decision that the hyperlinks were not infringing on Perfect 10's copyright. It agreed with the district court's assessment that infringing websites existed before Google and would continue to exist without Google, thus it was not a contributory infringer. Furthermore, Google had no control over the infringing sites and could not shut them down, so any profits it may or may not extract from users visiting those sites did not constitute vicarious infringement. The court also agreed that including an inline link is not the same as hosting the material yourself. So in the case of framing, while it may "appear" that Google was hosting infringing material, it was only hosting a link to the material which the browser interpreted should appear in a certain way (Schultz, 2007). The appellate court also overturned the district court's decision that Google's thumbnails were infringing. Google's argument, which was upheld by the court, was a fair use defence. The appellate court ruled that Google's use of thumbnails was fair use, mainly because they were "highly transformative". The court pointed out that Google made available to the public the new and highly beneficial function of improving access to pictorial information on the Internet (Samson, 2007). This had the effect of recognising that search engine technology provides an astoundingly valuable public benefit, which should not be jeopardised just because it might be used in a way that could affect somebody's sales (Falzone, 2007).

Scheirer (2011) also narrates a case on file-sharing between A&M Records, Inc. and Napster, Inc. She explains that the plaintiffs accused Napster of infringing their copyright through its searchable index of downloadable music files. The US Court of Appeals for the Ninth Circuit confirmed that Napster could be held liable for contributory and vicarious infringement of the copyright of the plaintiffs to the degree that the defendant had the ability to remove the infringing material from their website. However, a consortium of 18 US copyright law professors filed an *amicus curiae* brief in the case and took the position that the copyright laws were not intended to protect existing business models in the face of changing technology and that, if the plaintiffs wanted copyright to extend to the suppression of new technologies, their redress was with the Congress rather than the courts. Nonetheless the ruling was upheld and ultimately led to the bankruptcy and folding of Napster in 2002.

From the cases cited above, the author concludes that social bookmarking does not infringe the rights of the authors of the works bookmarked. By participating in social bookmarking or collection and sharing of bookmarks, digital libraries do not infringe the copyright of the original creators of the information resources since the libraries do not tamper with the resources which remain in their original locations. Nonetheless, the libraries should watch against copying large volumes of content from the original re-

source and using the same as part of the bookmark. The content of the bookmark should be usable to the extent that the bookmark is not perceived to replace the original source. Bookmarks should be restricted to providing information which enables the users to identify valuable resources. They should not attempt to replace the resources themselves by providing content which satisfies the information needs of the users to the extent that the users would not see the need to visit the actual resource. The ultimate goal of social bookmarks should always be to drive traffic to the resources perceived as valuable; not replacing them. Furthermore, as they bookmark, digital libraries should also observe courtesy and respect of the parties involved; endeavour to contribute unique and useful information; avoid actions which may be considered as spamming; respect confidentiality of the parties; and avoid flame wars which may have legal ramifications independent of social bookmarking itself. One way of streamlining social bookmarking is to develop and enforce a comprehensive policy on social bookmarking. This can be a stand-alone document or be part of the overall social media policy.

## **CONCLUSION**

The environment in which librarians currently operate has changed drastically. For instance, the emergence of new information and communication technologies, exemplified by the Internet, has changed the way people seek information, communicate and collaborate. Thus, modern library users expect better usability, faster response times to needs, and constant access to unrestricted library services. The concept of digital libraries emerged to address these expectations. In spite of the opportunities for better service delivery, digital technologies have also exposed digital libraries to myriad ethical and legal issues. One of the main challenges digital libraries currently face relate to intellectual property rights. Whereas digitisation sets information resources free and expands their reach, it also makes them vulnerable to violation. This chapter has discussed the concept of social bookmarking in terms of its potential to increase access to information as well as the intellectual property implications of its use in digital libraries.

From the foregoing, the author concludes that social bookmarking is a process of identifying and creating reminders of valuable information resources collectively. Digital libraries use social bookmarking as a means of increasing access to and sharing of information resources; improve web searching; as well as to enhance collaboration in the creation and use of information. Since the social bookmarks are public descriptions of and pointers to the original resources, digital libraries do not infringe the intellectual property rights of their creators or the authors of the works involved. Nonetheless, the libraries should watch against copying large volumes of content from the original resource and using the same as part of the bookmark as this may be construed as competition with the bookmarked resource. Digital libraries are also advised to develop and apply social bookmarking policies to streamline their use of social bookmarks.

## **SUGGESTIONS FOR FURTHER RESEARCH**

This chapter discussed the intellectual property implications of social bookmarking in digital libraries. It specifically defined the concept of social bookmarking; explained its potential benefits for effective information management in digital libraries; and discussed how its use may or may not affect the copyright of the authors of the bookmarked resources. The author did not discuss social bookmarking tools



in detail. There is need for research on social bookmarking tools in terms of whether or how they can be used to unintentionally infringe intellectual property rights. Such discussion may result in recommendations to developers on the features to avoid or add to the social bookmarking tools. Similarly, social bookmarking users may apply the recommendations of such a study to avoid intellectual property infringements. There is also a need for research on the patterns and trends in social bookmarking as well as case studies on its use in digital libraries.

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## **KEY TERMS AND DEFINITIONS**

**Bookmark:** A bookmark is a record about a web resource which is created by a user to facilitate easy access of the resource in future. Therefore, a bookmark is a form of shortcut to the resource saved by a user to enable quick access of the resource later on. This record typically has the title of the resource, comments about its usability, tagging of the people who may find the resource useful and, importantly, a hyperlink to the location of the resource.

**Copyright:** Copyright is a subset of the intellectual property rights. It covers literary works (such as novels, poems and plays), films, music, artistic works such as drawings, paintings, photographs and sculptures as well as architectural design. Copyright laws generally grant authors, artists, and other creators of creative works the protection for their literary and artistic creations. They hold the exclusive right to use or authorise others to use the work on agreed terms. Copyright also provides protection of

related rights. The rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and broadcasters in their radio and television programs.

**Crowdsourcing:** A combination of the words “crowd” and “sourcing”. It is a content generation model which involves obtaining information by enlisting the services of a large number of people, either paid or unpaid, typically via the Internet using social networking platforms and techniques.

**Digital Library:** A digital library is a library where the collection is processed and stored in digital formats. This facilitates electronic searching and retrieval of the same through digital devices such as computers. Digital libraries are sometimes described as ‘paperless,’ ‘virtual,’ ‘library without walls,’ ‘electronic library,’ and ‘bionic library,’ among other names. Although some scholars also describe digital libraries as those libraries which have more digital collections than physical ones, others assert that digital libraries only offer services electronically; they are virtual and do not have a physical presence. Some literature also reveals the common understanding that most digital libraries contain highly specialised collections. It is also evident that digital libraries do not stock all the information resources locally but often collaborate with content producers to facilitate online access.

**Folksonomy:** A user-generated system of classifying and organising online content into different categories by the use of metadata created collaboratively by individuals using social networking platforms. It is opposed to taxonomy which uses well defined classification schemes and categories. Whereas folksonomy is informal and voluntary, taxonomy is formal and comprehensively structured.

**Intellectual Property:** Intellectual property refers to creations of the mind such as inventions; literary and artistic works; and symbols, names and images used in commerce. Intellectual property is divided into two categories: 1) industrial property which includes patents for inventions, trademarks, industrial designs and geographical indications; and 2) copyright covers literary works (such as novels, poems and plays), films, music, artistic works such as drawings, paintings, photographs and sculptures as well as architectural design.

**Semantic Bookmarking:** Semantic bookmarking is a tagging process which facilitates the annotation of resources with tags extended by semantic definitions and descriptions. It is similar to social bookmarking except for the fact that the tags used are pre-determined. Thus, semantic bookmarking seeks to solve common folksonomy problems such as polysemy, synonymy, homonymy, diverse lexical forms, varying spellings and a lack of commonly agreed meaning of terms. The proponents of semantic bookmarking argue that it leads to better retrieval of information, better use of annotation and better quality assurance.

**Social Bookmarking:** Social bookmarking is the practice of Internet users identifying and labelling web pages for later use. It has become a popular way for individuals to organise and share online resources. Social bookmarking is a phrase generally used interchangeably with social tagging. Social bookmarking is therefore construed as the process through which users identify sites of interest while social tagging is the method by which users classify or categorise bookmarked sites for retrievability. In the context of this chapter, the two terms are considered synonymous.

**Tagging:** The process of adding metadata to a document; it is assigning a keyword or phrase that describes the theme of a group of articles, photos, videos, or other types of media files as a way organising them to facilitate easy access later. Ordinarily, this involves annotating documents with a flat and unstructured list of keywords known as “tags”.