Qualitative and Quantitative Methods in Libraries (QQML) 3:627 –636, 2014

An analysis of library's intellectual capital resources for library networks

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Abstract
Purpose: The main aim of this paper is to explore methods for identifying and managing library's intellectual capital resources within library networks. The analysis is further focusing on the phenomenon of libraries' competition and cooperation in the light of intellectual capital theoretical perspective.
Design/methodology/approach: Library's intellectual capital assets/resources are approached through known identification methods, and a distinction between resources and assets is taking place. The categorization of the intellectual capital resources/assets includes human, organizational and relational capital categories. The significant role of non-tangible assets/resources is identified when studying relationships among libraries as well as among libraries and other organizations within networks.
Findings: A framework is proposed for understanding the combinations of strong, moderate and weak scenarios of library cooperation and competition in support of intellectual capital assets/resources.
Originality/value: The results from this research are conceptually linked to individual library performance, to the formation of libraries' networks and to the maintenance of those that already exist. The intellectual capital resources can be further examined and analyzed on the basis of their effect on value creation for different types of libraries.

Keywords: intellectual capital, library management, human capital, organizational capital, relational capital, cooperation, competition.

Received: 24.3.2014 / Accepted: 14.8.2014 ISSN 2241-1925

1. Introduction

Intellectual capital was integrated in human activities even since the very beginning of civilization (Baruch, 2001; Lev, 2001). Libraries over the years contribute to the establishment of the socioeconomic environment, which nowadays is based on information and knowledge. This economy of knowledge is "channeled" through the rapidly advancing Information and Communication Technologies (ICTs) and the Internet. Libraries and information services can potentially play an important role, serve as mediators and in some cases can guide user communities, organizations and businesses in this information environment (Kostagiolas and Bohoris, 2010). Intellectual capital is interlinked to libraries' services and operations. Libraries and their networks utilize, share and produce knowledge assets and social capital (Kostagiolas, 2012). Indeed, knowledge assets are widely present and are necessary for societies and economies.

The value of information and knowledge assets and/or resources, knowledge dissemination as well as knowledge management is of great importance (Kostagiolas, 2012). Libraries have evolved throughout human history as gatekeepers of knowledge and intellect. Nowadays, libraries come in thousands with various characteristics all of which they manage to adjust to new socioeconomic circumstances. To understand and manage libraries intellectual capital within a competitive environment is crucial since the original capital on it's and cannot guarantee success. The paradox is that in many cases intellectual capital resources that seem to be essential are often treated as the "Cinderella" of resources, holding an unclear role. Although library management have changed sharply over the past decades, a systematic approach for "intellectual capital management" is required. Intellectual capital resources should be managed properly so as to be identified and categorized, and measured. The stakes are high for libraries within the harsh economic circumstances encountered by most economies around the world (Kostagiolas et al., 2011).

Intellectual capital management of libraries is gradually becoming a crucial issue fostering innovation that genuinely improving operations, and services. On the other hand, guidance is required as regards the management of intellectual capital. The paper initiates with a definition and a classification of intellectual capital recourses as well as an identification of a number of innovative and interesting issues concerning intellectual capital management. Hence, in this work we overall deal with the following issues:

- How intellectual capital is defined and what might be its significance for libraries and their networks?
- What is the impact of intellectual capital to library networks?

In this context, a systematic approach towards the study of library networks' intellectual capital is attempted. The paper further examines and analyzes the

phenomenon of library's cooperation and competition (co-opetition) in the light of intellectual capital theoretical lenses.

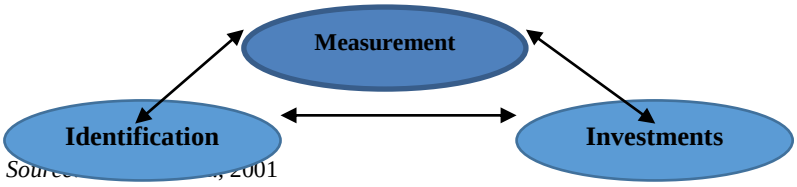
2. Managing Human, Structural and Relational Capital

Several myths accompany the term intellectual capital and several authors have given different interpretations (Nerantzidis et. al. 2013). According to Kaufman and Schneider (2004) intellectual capital is defined as the agglomeration of intangible assets (e.g. all invisible, non-monetary assets that an organization holds which are not included in the balance sheet). According to several conceptual attempts such as the ones by Edvinsson and Malone (1997), Roos et al. (1997), Sveiby (1997), MERITUM (2002), Bontis (2002), Grasenick and Low (2004), Gallego and Rodriguez (2005), intellectual capital is classified into the three following categories:

1. Human Capital
2. Organizational (or Structural) Capital
3. Relational Capital

For example, an intellectual capital resource which can be placed under "human capital" could include the library's staff (staff quality is determined by their ability to recruit new users and maintain them overtime, be driven by the goals that library's management has set); while "structural capital" includes the library systems, databases, the level of information technology utilized, service practices, and other management resources in order to accomplish strategic goals. Finally relational capital may include the library's surrounding environment, such as the relations with publishers and contracts with suppliers.

Figure 2.1 Stages for the development of an intangible asset management system



Source , 2001

Moreover, Roos et al. (2005) provided a definition of intellectual capital management: *"Intellectual capital management is the deployment and management of intellectual capital resources and their transformation (into intellectual capital resources or traditional capital resources) to maximize the present value of the organization's value creation in the eyes of its stakeholders."* Libraries' administration should view intellectual capital as crucial assets/resources that need to be identified, measured and at the end of the day financially evaluated (Figure 2.1). According to this approach the library management should (Gallego and Rodriguez, 2005):

- Initially identify the library's intellectual capital assets/resources and intangible investments.
- Determine specific indices for the measurement and evaluation of intellectual capital resources.
- Monitor the effects of intangible investments on the development of intangible assets/resources and then to assume actions for the mobilization of intangible resources aiming at value creation.

This value creation process can utilize new intangible assets or discard others, thus creating a need for repetition of the above-mentioned process. According to the above approach intellectual capital contributes in value creation within libraries, and the intellectual capital management deals with the "hidden" capital that is not recorded in the balance sheet. Therefore, it is based on the fact that the real value of a library is not the one presented in the balance sheet of assets. The library's true value is best expressed as the total of its financial value with an estimate of the value of its intellectual capital (Kostagiolas, 2012).

Figure 2.2 Library intangible asset management framework

Source: Kostagiolas and Asonitis (2010)

A library management strategy is portrayed in Figure 2.2 which includes actions for tangible and intangible assets related to a set of indicators that may be used to measure the library's performance and therefore provide further guidance for managerial issues. Roos et al. (2005) suggests that the library's management team should make judgments based on the following three aspects of intellectual capital resources:

- How influential is a given intangible resource upon the organization's ability to create value?
- What is the level of quality held by the intangible asset as compared to the ideal intangible asset quality?
- How many intangible resources should the organization acquire, compared to an ideal situation?

Libraries can contribute, through their services and systems, a core segment of all necessary knowledge and information required by the current global competitive economic environment. On the other hand, libraries all over the

world face the pressure of competition and are urged modernize their management procedures and other systems.

3. Library's relations and networks

3.1. Library alliances and cooperation

Libraries throughout their long history develop collaborations and alliances with other libraries and/ or organizations in order to survive. Within these collaborations tangibles and intangible resources are shared for the benefit of all network members. Indicatively, categories of alliances and cooperation may include the following:

- Teamwork programs within the library.
- Collaboration programs of the library with other units, organizations and businesses within the same geographic area.
- Associations and links with other libraries at the same or other geographic areas.
- Cooperation for sharing information and other digital resources through the internet.
- Alliances with other organizations of the different nature and aims but partially coinciding objectives.

The above indicative library networks may be formal or informal and may include organizations of all economic sectors (private, public etc.). Library synergies, collaborations, alliances, consortiums, links and networks are highly valued worldwide. For example, libraries are cooperating with publishers and /or other information providers. However, at the same time, libraries within networks compete with each other and with other organizations, e.g. the publishers. Overall, some of the library activities are actually transferred within the cooperative environment, e.g. acquisition, cataloguing and documentation as well as the development of specific information services.

The intellectual capital environment creates a breeding ground for the development of innovation as, by nature, is intangible and includes the internet, the new information technologies and the digital media. For example, in recent years there has been a notable shift with regards to the collaborative management of collections through innovative technologies and services. The most obvious change has been that libraries have needed to find ways to work collaboratively for the acquisition of leased databases of digital content. This has seen the development of numerous different types and sizes of consortia that enable libraries to receive immediate benefits in terms of pricing and content for database subscriptions (Jilovsky & Genoni, 2014).

3.2. Cooperation and competition within library networks

Organizations and enterprises of the same nature, cooperate with each other with aim to create or explore markets, but compete in gaining user demand or in

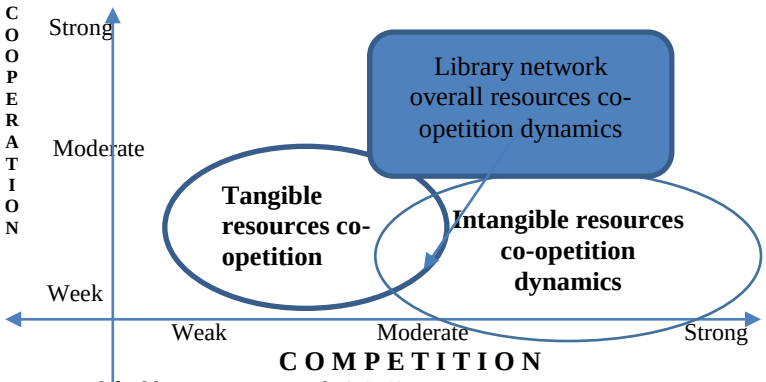
resource utilization. This phenomenon called co-opetition and should be examined and analyzed in the light of library intellectual capital theoretical perspectives (Peng, 2011). Furthermore, the same author states that co-opetition is an important and a dynamic issue for the management of relationships within the library networks. Library networks, also refers as library consortia, cooperative library organizations and cooperative library arrangements, are usually created through formal arrangements and may include libraries from different geographical regions and thematic areas. A library cooperative system may be a non-profit entity with a specific management structure, staff and budget. Value creation and value utilization are the main terms and the drivers of co-opetition. Analytically, as Kostagiolas (2012), refers, library create value by sharing resources through co-operation, but are forced by competition to compete on outcome utilization. There are strategic issues, within a library consortium, and interesting questions on the use of each library's intangible resources:

- How can the co-operative characteristics of libraries and information providers, such as publishers, be modeled in terms of the intellectual capital utilized/produced?
- Under which conditions should libraries collaborate with their competitors?
- Which specific assets/resources from human, organizational and structural capital categories, are involved in the evaluation of an opportunity to collaborate with competitors and which of them are required to manage this type collaborative relationship?
- Which are the suitable managerial solutions in order to adjust intellectual capital sharing within co-operative networks for network coordinators or members?

Enser (2001) provides an important co-opetition aspect, which he names *"the convergence"*. This perspective includes the extensive availability of digital cultural artifacts "belonging" into memory organizations or into memory consortia. According to our perspective, library's co-operative dynamics includes both tangible and intangible assets/resources produced or utilized within a library network. However, the *dynamics* within a library consortium are different when sharing tangible and intangible resources. Figure 3.1 portrays a number of combinations of strong, moderate and weak relationships for cooperation (vertical axis) and competition (horizontal axis) specifically for tangible and intangible resources. Mutually beneficial co-opetition situations are generally characterized by a balance between competition and cooperation (Bengtsson et al., 2010). Bengtsson's analysis over the tensions that occur, due to different types of co-opetition in tangible and intangible resources, show us that without the necessary measurements, libraries may be forced towards situations of overmbeddedness or distance, or even of destruction. Library network management should focus on relieving tension among competition and cooperation regions and should aim at striking a balance in co-opetition dynamics.

Some theoretical examples of different library network co-opetition dynamics are presented below. Assuming that a regional library consortium consists of a small number of public and school (public elementary and middle school) libraries. Supposing that the current availability of tangible and intangible resources in public school libraries is low, with some school libraries facing staff shortages and lacking basic resources to support pupils. Within this hypothetical cooperating schema, public libraries share their resources and provide know-how for enhancing school library services and inspiring the school community.

Figure 3.1 The dynamics of co-opetition in a library network with tangible and intangible resources



Source: Modified by Bengsston et al. (2010)

As we mentioned above, even though libraries cooperate, they also compete in terms of resource distribution, public funding and public image. In that case, library co-opetition interactions within the consortium are weak in terms of both competition and cooperation with tangible interaction dynamics being even weaker as compared to intangible interactions dynamics. The latter are more intense because of limitations in personnel skills and expertise demand; organizational aspects and culture are possible benefits in user demand. Weak competition may result in the increase of passive behavior and weaken motivation for expanding cooperation areas that create future competitive advantages (Katsirikou, 2004). In this case, library networks dynamics arise from cooperative interaction of tangible and intangible assets. However, library network management can choose competition intensively so as to motivate library members, namely an important program for using technology so as to improve school library user services and demonstrate the suitable practices in promoting learning resources within the students. Innovative managerial actions can influence network dynamics toward an ideal level of co-operation interaction at the center of figure 3.1. Some of these actions are the digitization of historical photographs or map collection, implementing video streaming and integrating it into the library collection, the digitization of scrapbooks,

newspapers, yearbooks or organizational archives, the digitization and transcription of an oral history collection and open content bibliographic management services. Furthermore, the development of social networking applications for library users and discovery tools that integrate library resources, the development of mobile technologies for handheld devices that improve access to library open catalogues and other documents or repositories (Kostagiolas, 2012).

In another case, let us suppose that strong interaction in cooperation and competition may arise within a library network such as in networks of research or academic libraries with other information institutions and publishers. Furthermore due to serious budget reductions, library management must reevaluate the role of academic libraries and what they should change so as to foster teaching, learning and research. For this reason, it is very important to support publishers and information players so as to face the economic challenges that libraries have. Strong network dynamics "push" libraries and institutions into strong cooperation but at the same time into competing for limited resources. Price is not the only factor used to determine acquisitions because libraries either individually or along with the networks administration promote (Wells, 2014) beneficial relationships with publishers. That way they manage to lower prices and improve efficiency. In the meantime, the digital environment gives an innovative field for libraries and publishers which may in their turn enable library users to bypass libraries in favor of publishers (Odlyzko, 1999). The same author states "librarians" will have to compete to retain their pre-eminence as information specialists.

The nature of competition between libraries and publishers or between journals and repositories, should also influenced by an additional tension factor, the "openness" (Banou and Kostagiolas, 2007; Brown, 2010). Furthermore, the treating position of libraries against publishers, for getting better prices purchasing academic content, consists another example of strong interaction between them. Nowadays libraries act as digital publishers and the publishers transformed to preservationists and guarantors, giving long term access to content. This change puts the libraries in an advantageous position in terms of pressure that exert to publishers, making competition between them stronger (Lucier, 2003).

4. Conclusions and Questions for further research

In this paper an analysis of distinct intellectual capital library resources has been undertaken and some more complex topics on the identification of intellectual capital resources have been covered. Within a library cooperation there are strategic issues of co-opetition, a phenomenon created when there is competition between the members, affected by the development of individual libraries that are involved in a collaborative effort. The level of competition is different between tangible and intangible assets; with an inverse relationship between these two dynamics as concern to intellectual capital and a proportional

relationship as concern to tangible assets. For intellectual capital and intangible assets/recourses, competition is stronger when the level of cooperation is weak. The opposite is taking place for tangible assets/resources shared in a library network. The strong cooperation and a maturing level of trust among libraries and other organization such as publishers within networks weaken opportunism. Libraries are renowned for their ability to work together in relative harmony in order to achieve common goals. The benefits of such collaboration are obvious in the form of financial savings but also in the degree of staff efforts. Administrative and funding bodies recognize such benefits and encourage libraries to work together towards common goals in the interests of financial and human efficiencies (Sidorko, P.-Lee, L., 2014).

Each of the different intellectual capital assets can be further analyzed and examined on the basis of this effect on value creation for different types of libraries under distinct socioeconomic conditions, using theoretical and empirical research methods. A number of very interesting associations concerning intellectual capital were made:

- Intellectual property rights
- The open access movement
- Library goodwill
- The library's location
- Competition and cooperation (co-opetition) within library's network

Although the presiding theoretical discussion is interesting, with many theoretical and practical implications, a detailed analysis goes beyond the scope of this work. The role of intellectual capital resources in sharing co-opetition dynamics within information networks is a very interesting issue for future research.

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