

# The Increasing Importance of the Academic Library in the Knowledge Management World

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*La creciente importancia de la biblioteca académica en el mundo de la gestión del conocimiento*

## Abstract

Innovation begins with novelty that typically has its origin in small organizations, start-ups and spin-offs, that most often provide new products and services, and are then often acquired by larger organizations. These fledgling organizations do not have the professional staff to assess information sources and to organize a well-designed information portal. Such small organizations, not having access to large in-house literary resources, usually rely on academic libraries to gain an understanding of the knowledge domains under study. These organizations typically think in terms of KM, Knowledge Management. While the professional and scholarly KM literature continues to provide evidence of its importance, it is striking to observe that there is relatively little interest in KM in the academic environment. Academic libraries can serve a very important role by serving those small organization, important both in terms of making their country more innovative and competitive, and important in terms of securing long term support for the operation of those academic libraries. The article suggests steps to provide that support and to accomplish those goals.

KEYWORDS: Innovation, Library, Knowledge Management, Academic Environment, Funding, Academic Libraries.

## Resumen

La innovación comienza con la novedad, la cual -por lo general- tiene su origen en las organizaciones pequeñas: ya sean de reciente creación (start-ups) o bien empresas derivadas (spin-offs), las cuales a menudo proporcionan nuevos productos y servicios que frecuentemente son adquiridos por las organizaciones más grandes. Esas organizaciones incipientes o chicas no tienen el personal profesional para evaluar las fuentes de información y crear un portal de información bien diseñado. Tales organizaciones, al no tener acceso a grandes recursos bibliográficos in situ, por lo general se basan en las bibliotecas universitarias para obtener mayor conocimiento en su área de interés; normalmente piensan en términos de gestión del conocimiento. Si bien la literatura profesional y académica en esta disciplina continúa demostrando su importancia, es sorprendente observar que existe relativamente poco interés sobre la gestión del conocimiento en el ambiente académico. Las bibliotecas académicas pueden desempeñar una función muy importante al atender a esas pequeñas organizaciones, significativa tanto en términos de hacer a su país más innovador y competitivo como en términos de asegurar el apoyo a largo plazo para el funcionamiento de las bibliotecas académicas. El artículo sugiere medidas para proporcionar ese apoyo y lograr esas metas.

PALABRAS CLAVE: Innovación, biblioteca, gestión del conocimiento, ambiente académico, financiamiento, bibliotecas académicas.

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## The theme

The first theme of this article is very straightforward: We assert, with some confidence, that Academic Libraries are becoming increasingly important for organizational and national effectiveness.

### Why?

Large organizations are, particularly in the life sciences, de-emphasizing in-house research, and now typically look to smaller organizations for new products and developments. (Howells, 1999; Fabrizio, 2009; Rockoff, 2014).

The channel for acquiring that knowledge or those products is typically through licensing, through joint venture, or by acquisition.

Those smaller organizations that provide the knowledge or the products are most typically spin-offs from University based research.

And for these organizations, what do they depend on for their information support? The University Library.

### Developmental Background

It has become increasingly recognized that economic progress depends largely on the innovation of new products and services.<sup>1</sup> Consequently it is the case that a nation's economic competitiveness depends on its ability to develop new and innovative products and services – in short upon its ability to innovate.

Innovation naturally has its foundation in preexisting knowledge. One way of instantiating new knowledge is through the transitions of a mix of tacit and explicit knowledge as earlier outlined by Nonaka.<sup>2</sup> Others have touted focusing on new knowledge vis-a-vie the bidirec-

tional transitions of data to information to knowledge (aka DIK model).<sup>3,4</sup> Still, the evolution of knowledge cannot be segregated into neat and clean containers. Knowledge is said to be the actionable human quality gained from the capacity to derive mental insight from facts.<sup>5</sup> Knowledge is thus instantiated from these facts, and then placed in context, analyzed, and synthesized using references from past experience, mental comparison, and consideration of consequences.<sup>6, 7, 8</sup>

Innovation begins with novelty and typically has its origin in small organizations.<sup>9</sup> Those small organizations that most often provide new products and services are typically spin-offs from University based research. These fledgling organizations do not have the professional staff to assess information sources and to organize a well-designed information portal, while university libraries do have those skills. Therefore such small organizations, not having access to large in-house literary resources usually must rely on academic libraries to gain an understanding of the foundational domains under study.<sup>10, 11</sup> An academic library provides an atmosphere from which the instantiation of new knowledge may be realized.

In recent decades, large information dependent organizations, particularly those based on the life sciences, are de-emphasizing in-house research and the provision of research resources.<sup>12</sup> Instead, these organizations typically seek the

<sup>1</sup> MUNDRA, Neeru, GULATI, Karishma, VASHISTH, Renu. Achieving Competitive Advantage through Knowledge Management and Innovation: Empirical Evidences from the Indian It Sector. *The IUP Journal of Knowledge Management*.

<sup>2</sup> NONAKA, Ikujiro. The Knowledge-Creating Company. *Harvard Business Review*.

<sup>3</sup> DALKIR, Kimiz. *Knowledge Management in Theory and Practice*.

<sup>4</sup> DAVENPORT, Thomas H., PRUSAK, Laurance. *Working Knowledge: How Organizations Manage What They Know*.

<sup>5</sup> SCOVETTA, Vince. The Impact of Leadership Social Power on KM Success.

<sup>6</sup> DAVENPORT, Thomas H., PRUSAK, Laurance, *op. cit.*

<sup>7</sup> HUBER, George P. Organizational Learning the Contributing Processes and the Literatures. *Organization Science*.

<sup>8</sup> SCOVETTA, Vince, ELLIS, Timothy J. *Defining Leadership as an Influence on KM Success*.

<sup>9</sup> BURNS, Paul. *Entrepreneurship and Small Business*.

<sup>10</sup> JOHNSON, Jim, ANDRADA-TANEGA, Milagros, MITCHELL, Barbara, GUNNELS, Claire. Libraries & Small Business Development: Collaborative Efforts at Harris County Public Library.

<sup>11</sup> TROTT, Fiona, MARTYN, John. Information for Small Firms. The Relevance of Public Information Services.

<sup>12</sup> GIBBS, Wayt W. Public Not Welcome. *Scientific American*.

use of more agile organizations to provide the necessary research. In-house research tends to be focused principally on the organization's primary product and service area. Innovation, however, relies on novelty. Researchers have found that innovation does not occur in a sterile environment but instead is achieved via a mixture of knowledge areas and motivational transactions.<sup>13</sup>

To return to our theme, the bottom line is that those large information dependent organizations are relying more and more on the processes and products developed by spin-off and start-up companies based within the university community or its diaspora.

This is certainly not to deny that what is enabling this shift in the locale of where research is done is in large part the internet itself, and the access to explicit knowledge and information that the internet provides. However, the analogy of the internet as like a library with the catalog cards strewn all over the floor still holds and will continue to hold a large kernel of truth. The start-up or spin-off organization does not have the professional staff to assess information sources and to organize a well-designed information portal.

**Therefore: What are the implications on academic libraries and academic library staff on small business innovation?**

To discuss the implications it is necessary not only to recognize the domain of librarianship as a subsumed entity of KM but to also provide a better understanding of KM.

## The background

### What is KM, Knowledge Management?

For many years a clear definition of KM remained elusive. The objective of KM has been identified as the ability to create value from an organization's tangible and intangible assets, but such a broad definition of KM makes a more precise and useful definition of KM difficult to arrive at.

<sup>13</sup> VEN, Andrew H. VAN DE, Polley, DOUGLAS E., GARUD, Raghu, VENKATARAMAN, Sankaran. *The Innovation Journey*.

While there are numerous definitions of KM, perhaps the most often quoted was developed by the Gartner Group: "A discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets." This definition, from 1998, is now a bit dated. Scovetta has more recently suggested that KM "... is the effective and accurate management of knowledge (acquisition, creation, storage, sharing, and use) used to promote and support organizational changes that enhance an organization's ability to effectively compete".<sup>14</sup> This concept of KM includes and emphasizes access to external information, the traditional domain of the library. Rather than being simply about "an enterprise's information assets", KM is now seen as about information relevant to an enterprise, whether internal or external.

## The history of KM

Perhaps the most clear-cut way to think about what KM consists of is to quickly retrace its history.

KM can trace its conceptual origins to the early studies of organizational memory<sup>15, 16, 17</sup> as well as Information Systems.<sup>18, 19, 20</sup> Organizations have long used the services of consultants and consulting firms to improve their competitive edge.

<sup>14</sup> SCOVETTA, Vince. *The Impact of Leadership Social Power on KM Success*, p. 11.

<sup>15</sup> JENNEX, Murray E., OLFMAN, Lorne. Organizational Memory/ Knowledge Effects on Productivity, a Longitudinal Study.

<sup>16</sup> JENNEX, Murray E., OLFMAN, Lorne., PANTHAWI, Pituma, PARK, Yong-Tae Park. An Organizational Memory Information Systems Success Model: An Extension of Delone and Mclean's i/s Success Model.

<sup>17</sup> WALSH, James P., RIVERA UNGSON, Gerardo. Organizational Memory. *The Academy of Management Review*.

<sup>18</sup> APPELEGATE, Lynda M., ELAM, Joyce J. New Information Systems Leaders: A Changing Role in a Changing World. *MIS Quarterly*.

<sup>19</sup> DELONE, William H., MCLEAN, Ephraim R. Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*.

<sup>20</sup> STEIN, Eric W., ZWASS, Vladimir. Actualizing Organizational Memory with Information Systems. *Information Systems Research*.

When the Internet emerged, those consulting firms quickly realized the potential impact of the Intranet flavor of the Internet for linking together a geographically dispersed knowledge based organizations such as their own. Then, having developed techniques to employ the Internet in their own operations, they soon quickly realized that the expertise they had gained was in fact a product that could be sold to other organizations. But a product needs a name, and the name chosen was Knowledge Management. The history of KM was first reprised by Prusak, one of the pioneers, (1999), who pointed out that the emphasis of the consulting firms upon KM was organic, not just a result of looking about for a new product to sell. More recently, the history of KM has been reviewed by Koenig and Neveroski (2008).

The development and the history of KM can be seen rather clearly as a series of stages:

These stages are:

- The Technology Stage. By the Internet out of Intellectual Capital (an equestrian metaphor that suggests that KM was sired by the Internet from the background provided by the then comparatively recent enthusiasm for the recognition of the importance of Intellectual Capital, i.e, knowledge).
- The HR (Human Relations) Stage. Design it well, and make it easy to use.
- The Library Stage. They have to be able to find it. Build good taxonomies (classification structures).
- KM and understanding Context. Relate it to your organization's needs.

While there is not time to discuss them here, these stages are discussed in some detail by Koenig and Neveroski (2008).

### **KM as the replication of the successful R&D environment**

There are several other illuminating ways to understand KM. One of the most useful, and one that will resonate

deeply with the academic library community, is to regard KM as the movement to create an environment that is known to be conducive to successful research. The presumption behind this perspective on KM, is that research and development is the quintessential knowledge work. As the information and knowledge age unfolds, an increasingly larger proportion of the work force has become knowledge workers.<sup>21, 22</sup>

The body of research work on KM consistently concludes that richness and openness in communication flow (knowledge sharing), access to information (knowledge discovery), and organizational leadership, are highly correlated with organizations success.<sup>23, 24, 25</sup> In particular there is a substantial and very consistent literature revealing that a key, perhaps the most important key to successful research, is rich, deep, open communications, and information transfer. This work was reviewed in a number of studies (Koenig, 1990, 1992a, 1992b) and can be seen in reviews of the "people" aspects of KM (Jank, 2012) that was emphasized early on by Davenport and Marchand (2001).

### **KM and business information management**

The late twentieth century business world, 1975 – 2000, was characterized by a series of management fads and enthusiasms.<sup>26</sup> What is now obviously striking is how many of those management fads, enthusiasms, and topics were highly related to the management of information, knowledge flow in organizations, and the

<sup>21</sup> JAYASINGAM, Sharmila, ANSARI, Mahfooz A., Jantan, Muhamad. Influencing Knowledge Workers: The Power of Top Management. *Industrial Management & Data Systems*.

<sup>22</sup> WIIG, Karl M. What Future Knowledge Management Users May Expect. *Journal of Knowledge Management*.

<sup>23</sup> ANANTATMULA, Vittal S. Linking KM Effectiveness Attributes to Organizational Performance. *VINE*.

<sup>24</sup> CHEN, Irene Y. L. Social Capital, It Capability, and the Success of Knowledge Management Systems. *Knowledge Management & E-Learning: An International Journal (KM&EL)*.

<sup>25</sup> SCOVETTA, Vince, ELLIS, Timothy J., *op. cit.*

<sup>26</sup> ROBERTS, Joanne. Reseña de: FURNHAM, Adrian. *Management and Myths: Challenging Business Fads, Fallacies and Fashions*.



management of information technology (IT). The twenty-first century, so far, has seen far fewer such fads and enthusiasms. Below is a list of those management fads, enthusiasms, and topics that meet those criteria (in rough chronological order, most recent first), most of which are discussed in the analysis by Koenig.<sup>27</sup>

- Big Data / Cloud Computing
- Enterprise Content Management
- Supply Chain Management
- Customer Relationship Management
- E-Business
- Enterprise Resource Planning
- Information Driven Marketing
- Knowledge Management
- Intellectual Capital
- Data Warehousing / Data Mining
- Core Competencies
- Business Process Re-Engineering
- Hierarchies to Markets
- Competitive Intelligence
- TQM (Total Quality Management) and Bench Marking
- IT and Organizational Structure
- Information Resource Management
- Enterprise-Wide Information Analysis
- MIS (Management Information Systems) to DSS (Decision Support Systems) and External Information
- I.T. as Competitive Advantage
- Managing the Archipelago of Information Services
- Information Systems Stage Hypotheses
- Decision Analysis
- Data Driven Systems Design
- I.T. and Productivity
- Minimization of Unallocated Costs

The observation that jumps out is that the list of topics is a phenomenon in its own right. The conclusion is that the topics above are, to use a classic metaphor, the trees in a forest, a forest of information and knowledge (small 'k') management. One can argue, and the authors support the thesis, that we have not yet fully appreciated the scope and importance of that forest. Furthermore one can posit that KM has graduated from being just one of many names on that list, to now becoming in effect the name for that forest of all the trees of information and knowledge (small 'k') management. KM has thereby morphed and expanded in scope to be the name of that forest. The forest of course is not static, new topics are emerging: "Big Data", for example.

<sup>27</sup> KOENIG, Michael E. D. *Information-Driven Management: Concepts and Themes: a Toolkit for Librarians.*

We have always had trouble defining KM, and now here is another definition, a new metaphor, KM is the name for that newly recognized forest of all the trees of information and knowledge (small 'k') management.

### What in practice does KM consist of:

The most basic way to define a subject is to enumerate its components. Knowledge Management (KM) is the effective and accurate management of knowledge (acquisition, creation, storage, sharing, and use) used to bring about positive organizational changes.<sup>28, 29, 30, 31, 32</sup> Knowledge Management Systems (KMS) add the dimension of technology to KM. This architecture then consists of a set of IT-based systems used to effectively manage knowledge.<sup>33, 34, 35</sup>

Simplifying greatly, KM can typically be seen to have four major components:

- Tools and sources to locate information and knowledge.
- Lessons learned (originally called "best practices" ) databases about the organization's processes and procedures.

- Expertise Locators, which put people in touch with who knows what in the organization.
- Communities of Practice, which digitally connect people inside (and also outside) the organization who have a common interest or subject.

What are the things that one does to get underway with KM?

- Implementation Steps (The Standard Prescriptive)
- Intellectual Capital Audit
- Make KM an explicit component of Evaluation and Compensation
- Examine Corporate Culture
- Incorporate an "After Action" component
- Encourage external contacts, conferences, trade shows, etc.
- Use Story Telling to sell KM
- Assign KM responsibility at a high level in the organization
- Start with projects that show results and impact quickly
- Use KM tools
- Build a Knowledge Map and identify gaps
- Make the Intellectual Capital Audit a routine event
- Identify metrics wherever possible and include them in the annual report

There is not space here to develop the two lists of topics above further, but see the bibliography and the recommended readings at the end of this piece.

These simple definitions do not however sufficiently account for the human component of a KMS. User friendly access portals, interactions that occur in communities of practice, training methodologies, and human interactions are all components of KM and KMS.<sup>36</sup> One of the environments where these human influence factors occur is the academic library. Here, visitors are allowed to freely engage in processes that support the acquisition, creation, storage, sharing, and potential use of knowledge (all basic components of KM).

<sup>28</sup> CHEN, Irene Y. L., *op. cit.*

<sup>29</sup> DAVENPORT, Thomas H., DE LONG, David W., BEERS, Michael C. Successful Knowledge Management Projects. *Sloan Management Review*.

<sup>30</sup> JENNEX, Murray E. Exploring System Use as a Measure of Knowledge Management Success. *Journal of Organizational and End User Computing*.

<sup>31</sup> KARL, M. Wiig. A Knowledge Model for Situation-Handling. *Journal of Knowledge Management*.

<sup>32</sup> QUINN, Michael D. Reseña de: WIIG, Karl. People-Focused Knowledge Management: How Effective Decision Making Leads to Corporate Success.

<sup>33</sup> ALAVI, Maryam, KAYWORTH, Timothy R., & LEIDNER, Dorothy E. An Empirical Examination of the Influence of Organizational Culture on Knowledge Management Practices. *Journal of Management Information Systems*

<sup>34</sup> ALAVI, Maryam, LEIDNER, Dorothy E. Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*.

<sup>35</sup> KAYWORTH, Timothy, LEIDNER, Dorothy. Organizational Culture as a Knowledge Resource. En: *Handbook on Knowledge Management 1*.

<sup>36</sup> SCOVETTA, Vince. *The Impact of Leadership Social Power on Km Success*.

## Consequences for the academic library in the KM age

Unfortunately, comparatively little attention had been paid to KM in the academic environment.<sup>37</sup> While the professional and scholarly KM literature continues to grow, it is striking to know there is a significant decline in the interest of KM in education over time (see Figure 1). One plausible reason for this decline may be administration resistance due to limited university funding. We believe this decline will continue as long as funding remains low. While most academic principals and faculty remain committed to education, commitment to KM remains lacking.

Another reason is that for university faculty, their commitment to their field, their discipline and their sub-discipline. Their “invisible college” comes first. Their commitment to their nominal home institution is quite secondary. And, for most of those faculty, their invisible college already functions as their community of practice. so their immediate interest in KM for themselves is quite modest.

## The conclusion

While the principles and constructs of KM are relatively new research areas, studies have indicated KM is critical to the success of a knowledge economy.<sup>38,39,40</sup> KM's importance to organizational success is due, in part, to KM's capacity to maximize organizational value and in-

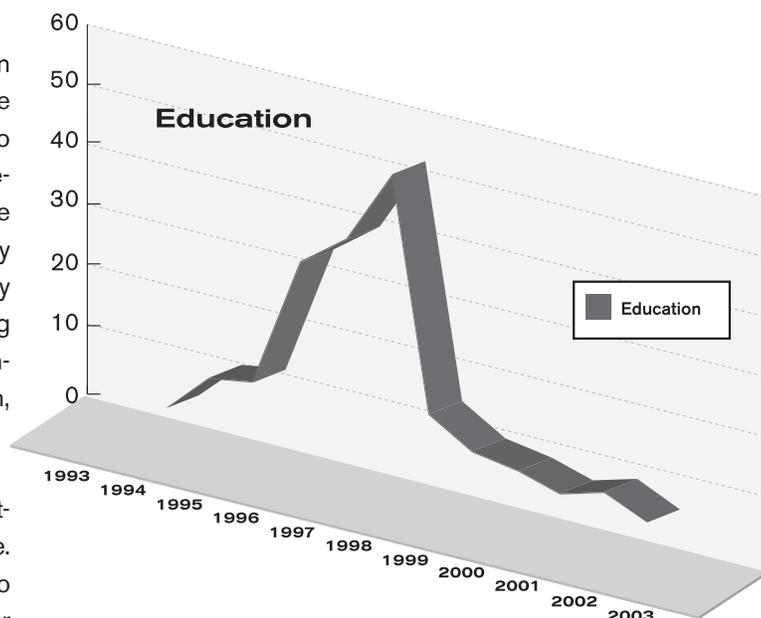


Figure 1. Educational Literature references KM (derived from McInerney and Koenig (2011)  
(KM Articles in ERIC: the Educational Resources Information Center database)

crease an organization's competitive edge.<sup>41,42,43,44</sup> University libraries are of course learning organizations that facilitate innovation.<sup>45</sup>

The KM discipline is important to library and information services, yet these same organizations are not effectively supporting KM. One potential pathway to enhancing KM is to secure external investments directed specifically to enhance KM capabilities. Researchers have good background knowledge about the effect of library service on the effectiveness and productivity of

<sup>37</sup> MCINERNEY, Claire R., KOENIG, Michael E. D. *Knowledge Management (KM) Processes in Organizations: Theoretical Foundations and Practices*.

<sup>38</sup> ALAVI, Maryam, LEIDNER, Dorothy E. Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*.

<sup>39</sup> DAVENPORT, Thomas H., DE LONG, David W., BEERS, Michael C. Successful Knowledge Management Projects. *Sloan Management Review*.

<sup>40</sup> JONES, Michael Brandt. *Organizational Culture and Knowledge Management: An Empirical Investigation of U.S. Manufacturing Firms*.

<sup>41</sup> ALAVI, Maryam, LEIDNER, Dorothy E., *op. cit.*

<sup>42</sup> JENNEX, Murray E. Exploring System Use as a Measure of Knowledge Management Success. *Journal of Organizational and End User Computing*.

<sup>43</sup> *Making Cents out of Knowledge Management*. Edited by Jay Liebowitz.

<sup>44</sup> SCOVETTA, Vince. *The Impact of Leadership Social Power on KM Success*.

<sup>45</sup> FOWLER, Rena K. The University Library as Learning Organization for Innovation: An Exploratory Study. *College & Research Libraries*.

the organizations that they support. However, there has been comparatively little work done on the implementation of KM. This is a domain ripe for research. But, it is admittedly a very difficult area, one replete with many confounding variables to study.

Before this stage is reached university libraries will likely need to undertake substantial pump priming.

***What then are the Prescriptives and Likely Success Factors for University Libraries in the KM environment?***

The first and most important aspect is Training and User Education (and not just for students, but very importantly for faculty also).

After Training and Education what?

Regarding the Faculty as your community:

- Work with faculty to build repositories.
- Work with faculty to make the faculty member visible, Blogs and Digital Object Identifiers for their key Blog items
- Build connections to (Liaise with Faculty and faculty projects.
- Embed library staff within faculty projects (more than just liaison).
- Educate Faculty about software tools.
- Identify those faculty members and graduate students working with those spin-off and start-up companies and organizations. The faculty are your links to those organizations.
- Identify those spin-off and start-up companies and organizations.
- Regarding the spinoffs and other organizations as your community:
- Identify those small generally technology based companies and organizations whose members use your library.
- Expand that to identify who constitutes your potential extended community of start-ups, spin-offs, etc.
- Internally review your procedures and practices for working with such organizations.

- Then establish a working group, particularly including the university's development office, to review those procedures and practices.
- If you don't have one, develop a program for corporate members.
- Benchmark the corporate membership programs of other academic institutions. What do they do or offer that you might incorporate in your program?
- Establish a culture of thinking of those organizations as future donors.
- Work to expand that culture beyond the library.
- Do you have a library liaison program with your STEM (scientific, technical, medical) departments? If not establish one.
- Examine the constraints concerning the provision of service to those beyond the university community, specifically limitations in regard to leasing and licensing requirements.
- Develop workshops on information sources and portal design. These can ostensibly be for departments and faculty in the university, but players in those start-ups and spinoffs can be included.
- Work with your faculty to identify who can benefit and who should be invited from outside the university community.
- Brainstorm with faculty on how best to publicize such workshops.
- From that potential extended community of start-ups, spin-offs, etc., identify who is already affiliated in some way with your institution, perhaps as an adjunct faculty member. Make sure that they are aware of what you can offer them. These people are ready made contacts to your extended community.

These steps will get the university library well underway toward serving a larger community and toward assuming a much more important role in the economic success of their region and their country. 

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KOENIG, Michael E. D. (1990), "Information Services and Downstream Productivity", in The Annual Review of Information Science and Technology, ed.; Martha E. Williams. Vol. 25, New York, Elsevier, 1990, Chapter 2 : 5586. (A classic, but superseded by the above.)

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### **Recommended Reading:**

NMC Horizon Report > 2014 library Edition ( nmc = News Media Consortium ) (2014) isbn: 979-0-9914828-8-7 Available at: <http://cdn.nmc.org/media/2014-nmc-horizon-report-library-EN.pdf>

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### **To be avoided:**

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University Investment in the Library, Phase II: An International Study of the Library's Value to the Grants Process, Library Connect White Paper, San Diego, California, Elsevier, 2010. <http://libraryconnect.elsevier.com/whitepapers/roi2/lcwp021001.html> (Note, the Authors' names are not mentioned to avoid embarrassment to them. The methodology is borrowed from an article describing an ROI (Return On Investment) analysis in a corporate library, appropriately done, but the conversion is inappropriate and the result is meaningless.)

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