FROM INTELLECTUAL CAPITAL TO KNOWLEDGE MANAGEMENT: WHAT ARE THEY TALKING ABOUT?*

By Michael E.D. Koenig

With the corporate intranet as a catalyst, Intellectual Capital has grown into Knowledge Management, the hottest new topic in the business community - up there on a par with IT, information technology, as competitive advantage; TQM, Total Quality Management; and Business Process Reengineering, and it may well surpass them all.

Where did this notion come from?

Intellectual Capital became popular in the early and mid 1990s. It is an instructive aside to point out that knowledge management has exploded so rapidly that we can already speak of its predecessor of only a few years ago in the past tense. „Intellectual Capital represents the awareness that information is a factor of production, as economists would phrase it, in a category with land, labor, capital and energy".[1] In the early and mid 1990s there was an increasing awareness in the business community that knowledge was an important organizational resource that needed to be nurtured, sustained, and if possible accounted for. Peter Drucker, as he commonly does, put it perhaps most compellingly:

> We now know that the source of wealth is something, specifically human knowledge. If we apply knowledge to tasks that we obviously know how to do, we call it productivity. If we apply knowledge to tasks that are new and different, we call it innovation. Only knowledge allows us to achieve those two goals.[2]

Even more important was that the Internet's explosion during the 1990s occurred concurrently with the Intellectual Capital movement. The business world realized that Internet technology and procedures could be used to link an organization together. Using the Internet and its conventions for data display and access, and limiting access to the members of an organization, results in an „Intranet". Companies had used LANS, Local Area Networks, and WANS, Wide Area

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1 Eduardo Talero and Philip Gaudette, Harnessing Information for Development: World Bank Group Vision and Strategy, Draft Document, (Washington, DC.: The World Bank, July 1995).
2 Hibbard, 46

Networks, for some time but, Internet based Intranets were far easier to set up and administer, and the tools for employees to put information on the net and to access it were far superior.

Intellectual Capital was first defined as having two major components, information and knowledge capital, and structural capital.

INFORMATION AND KNOWLEDGE CAPITAL   STRUCTURAL CAPITAL
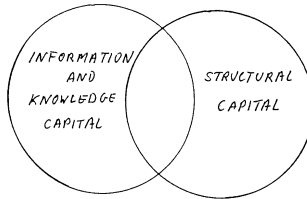
Information and knowledge capital was of course the organization's information and knowledge, but the informal and unstructured as well as the formal.

The structural capital was of course the mechanisms in place to take advantage of the information and knowledge capital, the mechanisms to capture, store, retrieve, and communicate that information and knowledge.

One immediate consequence of the appearance of Intranets was the awareness that they could be used to facilitate communications with one's customers, as well as within the organization itself. Of course, electronic communications with suppliers and customers had been increasing since the 1970s, EDI, electronic data interchange and JIT, just in time inventory, being examples, but the intranet very much accelerated that process. One consequence of this was an expanded definition of Intellectual Capital to include the customer's knowledge and input, customer capital.

INFORMATION AND KNOWLEDGE CAPITAL   STRUCTURAL CAPITAL
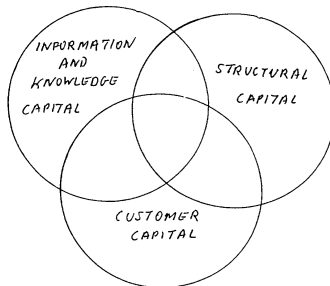
CUSTOMER CAPITAL

The inclusion of customer capital was also unrelated to the popularity of TQM, Total Quality Management, in which responding to customer need and demand was a key element.

Concurrent with Intellectual Capital, and very much reinforcing it was the notion of the „Balanced Score card".[3] The idea here was that traditional financial reporting was too narrow in its outlook, and that in particular it focused only in the present and in the past, with no thought to the future. It was argued that there should be instead a „balanced score card" that included the traditional financial measures, but that also measured other things such as comparative product quality, and customers satisfaction and turnover, things that were more indicative of current performance and better indicators of likely future performance. By traditional financial indicators, if the current balance sheet looks good, but customers have begun to defect to the competition, there is nothing to reveal that the situation is in fact not healthy. The idea of the balanced score card is intended to resolve that anomaly. Intellectual Capital is of course one of the obvious items that should be included in the balanced score card. One should be aware that the enthusiasm for the balanced score card arose partly as a consequence of the perception in the Anglo countries that their financial systems and the market's interest in short-term financial gain forced corporations in those countries to focus too much on the short term, with not enough thought for the long term, in contrast to the banking and financial reporting procedures in Japan and Germany and the East Asian tigers where corporations and their banks customarily enjoyed long term relationships which presumably fostered long-term thinking and strategy. The recent downturn in Japan and South East Asia, attributed in large part on too cozy relationships between companies and banks has made that thesis rather less compelling however.

Information however is an extraaordinarily diffuse and nebulous thing to attempt to quatify, and measuring and accounting for it (in the sense of the accounting profession) continues to be a daunting task. Only very modest progress has been made in that quarter. Even so, the Intellectual Capital movement was successful in bringing the importance of information as a key „factor of production" to the attention of management.

The dramatic consequence of the confluence of the Intellectual Capital movement and the appearance of the Internet/Intranet however was the fusion of these elements, and more besides, into knowledge management. In equestrian terms,

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3   Kaplan, R.S. & Norton, D.P. „The Balanced Score Card - Measures that Drive Performance", Harvard Business Review 70 (i): 71-19, Jan.-Feb. 1992.

Knowledge Management can be described as out of Intellectual Capital by Intranet.

Knowledge Management is now becoming the hottest topic to hit librarianship in the last quarter century. It may well surpass online searching, the previous record hot topic. There are various definitions for Knowledge Management - one good one is „the broad process of locating, organizing, and transferring, and using the information and expertise within an organization"[4,] another is „the process of capturing a company's collective expertise".[5]

It is tempting to see Knowledge Management as simply librarianship applied to the operations of an organization, whether a for-profit consulting firm, such as Andersen or a non-profit organization such as the World Bank. The reality is that Knowledge Management has become a much broader concept as it is now defined in the business community, and to deal successfully with Knowledge Management, to effectively take advantage of Knowledge Management, we need to understand how the term is used in the business community, and we need to use it in that fashion ourselves. It is too broad and too powerful a concept to try to put our own stamp on it, nor should we want to. Our customers and our management is most easily sold on the concept if they believe it has their stamp on it.

To return to the development of the concept of Knowledge Management, the first organizations to fully realize the potential of Intranets were typically the larger, worldwide consulting firms who had long realized that the commodity they dealt in was information and knowledge. These firms saw the intranet as an ideal tool with which to share and disseminate knowledge throughout their organization's scattered offices. The phrase they chose to describe the Intranet based systems they were developing was „knowledge management". How can a consultant in Valparaiso, Chile, working for a company headquartered in Chicago be made aware of work done by another consultant in Stockholm, work that the Santiago consultant could use to respond authoritatively and convincingly to a request for a proposal and be awarded the contract? The best current answer to that problem is Knowledge Management.

From there the concept of knowledge management continued to expand. Senge's The Fifth Discipline, The Art and Practice of the Learning Organization appeared in 1990,[6] and had established something of a cult following, but had not made a major impact, but with the intranet driven Knowledge Management it meshed

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4   http://www.apqc.org/b2/b2.htm

5   Justin Hibbard, „Knowing What We Know", Information Week (October 20, 1997): 46-64.

6   Senge, Peter M. The Fifth Discipline, the Art and Practice of the Learning Organization, New York, Doubleday, 1990.

perfectly. The Learning Organization is the thesis that what ultimately creates and distinguishes a successful organization is its success in creating and sharing information and knowledge, in short its success at learning. The obvious corollary is that to be successful, an organization must create a cultural that fosters learning. One can say, to summarize perhaps too briefly, that the concept of the Learning Organization focuses on the creation of knowledge, while Knowledge Management, as it was originally construed, focuses on the acquisition, structuring, retention, and dissemination of that knowledge." What has happened to Knowledge Management is that what is meant by that term now includes the concept of the learning organization.

A new term that has recently emerged is FLO, the Faster Learning Organization. This is the goal of knowledge management, to create an FLO that will thereby have a major competitive advantage over other organizations. In the words of Skip LeFauve, Senior Vice-President of General Motors Corporation, and President of General Motors University and previously Chairman of GM's Saturn Division: „The only long term competitive advantage that a company has is how effectively it manages its company knowledge."[7]

Another important perception that has accelerated the enthusiasm for Knowledge Management has been the richness versus reach thesis of Evans and Wurster. They pointed out in the Sept./Oct. 1997 issue of the Harvard Business Review[8] that the nature of communications had drastically changed. Their observation is that until now, one had a choice of richness or reach in communication, but one could not achieve both simultaneously. A face-to-face convention for example was rich in content, nuance, and interactivity, but its reach was small, one or at most a few persons. A mass mailing or radio or TV broadcast had great reach, but was thin on content, nuance, and interactivity. Communication strategies were always an either-or choice.

How with the Internet, the argument runs, we can craft systems that simultaneously provide both richness and reach, and this transforms not only how we think about communications, but also how we think about organizations and how they do business. This thesis, which is in a sense an instantiation of Gibson and Jackson's Domain III[9], Transformation, and Koenig's Stage III[10], has been

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7   Presentation of the Conference Board conference „The 1998 Conferemce on Knowledge Management and Organizational Learning", Chicago, Illinois, 15 April 1998.

8   Evans, Phillip B. and Wurster, Thomas S. „Strategy and the New Economics of Information, 75(5): 70-82, Sept./Oct. 1997.

9   Gibson, Cyrus F. & Jackson, Barbara B. The Information Imperative: Managing the Impact of Information Technology on Business and People, Lexington, Mass. D.C. Henth, 1987.

incorporated into the canon of Knowledge Management as a very persuasive argument as to why the time is right for a thorough rethink of how information and knowledge is shared in the organization. Further it can be argued, the removal of the richness or reach dichotomy means that changes will not be gradual and incremental, but that they will be major and dramatic, and that the organization that does not keep up risks being left very far behind, and possibly out of business very quickly.

Those dramatic changes harken back to the vision of business process reengineering. But, there is a very real difference, Knowledge Management is perceived as a way of keeping the good of business process reengineering, but avoiding its excesses, the downsizing and rightsizing with the concomitant human suffering and insecurity so often associated with business process reengineering.

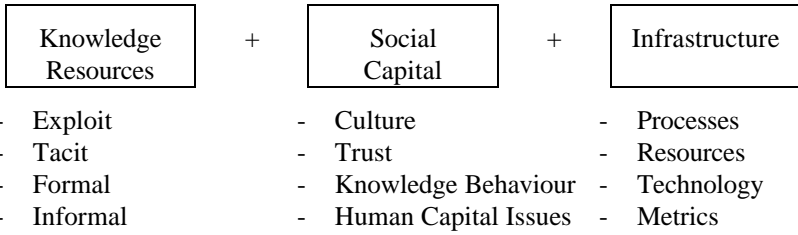The word now being mentioned often in the same breath with knowledge management is „trust".

This is perhaps a trifle surprising, but it is also in fact quite logical. Good communication, and extensive knowledge sharing are not likely to happen unless there is an atmosphere of trust and some commitment to the employee. Knowledge management is in effect being presented as the antidote to the trust lost and to the knowledge lost in ill conceived and ill executed rightsizings when valuable employees were let go, with their knowledge going with them, and with a reservoir of mistrust and insecurity left behind. As Larry Prusak blunty puts it „reengineering is the enemy of knowledge".[11]

Social Capital is another frequently mentioned facet of the same recognition. In this business context, social capital is operationally defined as those behavioral norms that lower transaction costs and enable cooperation. What norm better to enhance communications, transactions, and cooperation than trust? It is interesting to observe that at the same time there is an increasing recognition at the macro economic level of the importance of trust and consistency in international trade and for foreign direct investment.

In another sense, social capital is what has been added to intellectual capital to create knowledge management. Prusak of IBM employs the following graphic.[11]

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10 Koenig, Michael E.D. „The Convergence of Computers and Telecommunications Information Management Implications" Information Management Review, 1 (3): 23-33, September 1986.

11 Larry Prusak, Managing Principal, IBM Global Services, Consulting Group, Presentation to the Conference Board conference, „The 1998 Conference on Knowledge Management and Organizational Learning", Chicago, Illinois, 16 April 1998.

Knowledge Resources	+	Social Capital	+	Infrastructure

Knowledge Resources	Social Capital	Infrastructure
- Exploit	- Culture	- Processes
- Tacit	- Trust	- Resources
- Formal	- Knowledge Behaviour	- Technology
- Informal	- Human Capital Issues	- Metrics

It is very similar to the later graphic for intellectual capital, with the „customer capital" component replaced by „Social Capital". It is now assumed that customer capital is included in all of the above, the infrastucture extended to include the customer, the knowledge resources including the customer, and the social capital embracing the relationships not just within the organization, but with the customer (and the supplier to whom one is a customer) as well.

In fact, it is not too strong to say that Knowledge Management has expanded to become a portmanteau term intended to include all of the positive aspects of the management fads of the last decade and a half, while avoiding the excesses.

One very useful graphic visualization of the expanded concept of knowledge management is:


KNOWLEDGE MANAGEMENT FRAMEWORK
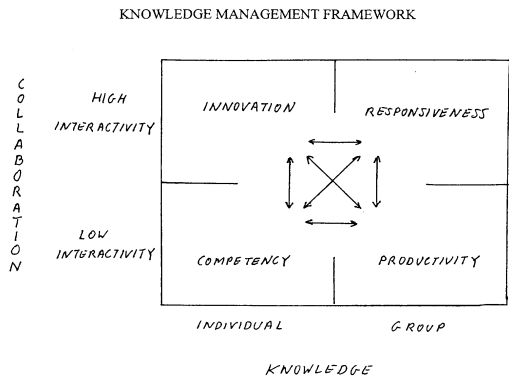
What this is intended to represents is - as Knowledge Management enhances knowledge sharing and collaboration, the results achieved are:

Innovation,	in areas of high	interaction and individual knowledge
Competency,	in areas of low	interaction and individual knowledge
Responsiveness,	in areas of high	interaction and group knowledge
Productivity,	in areas of low	interaction and group knowledge

This graphic, promoted by IBM, conveys particularly well how broad the concept of management has become in the business community.

Another useful graphic aid to thinking about Knowledge Management is:

THE KNOWLEDGE MANAGEMENT PROGRESSION

KNOWLEDGE   MANAGEMENT
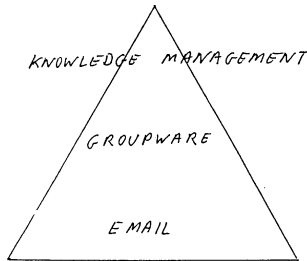
GROUPWARE

E MAIL

The idea here is that typically the first extensive use of information technology to enhance knowledge sharing is the widespread use of E-mail. Then comes broad use of groupware, software designed to help teams work together in an electronic environment, and then the apex is true knowledge management, including a transformation in the culture of the organization to encourage and reward information creation and sharing.

In summary so far, Knowldege Management has grown into a far broader, more pervasive, more powerful notion either than it started out to be or than its name would suggest. In fact, there is beginning to be a reaction in business circles that the term knowledge management is not the ideal phrase. Some persons maintain that it is both too specific for a concept that is really much broader, and also that it is perhaps somewhat impolitic, that users, employees, and customers don't particularly relish the implication that their knowledge is being managed, rather they would prefer terminology that would imply that they are being supported in their undertakings. One of many phrases that has been suggested to replace Knowledge Management is „Knowledge-Sharing", another is „Knowledge Networking"*

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*   One can see a parallel here of the terminological shift from MIS, Management Information System to DSS, Decision Support Systems. On the other hand, IBM's use of and support for the term knowledge management may standardize the term, just as it did for the term „word processing".

Knowledge Management Themes

Now that we have tried to sketch the domain of Knowledge Management, what are some of the major themes running through what the business community understands knowledge management to be?

- Silos

This is <u>the</u> hot new buzzword, - how do you integrate the silo? The silo here is a metaphor for the too self contained unit into which stuff gets dumped and taken out, but which has no communication with the other silos (products, regions, divisions, units, etc.) that constitute the organization. The solution to the silo problem is to create communities and thereby further collaboration. This is part of the reaction against the excesses of business process reengineering. The silos are, if you will, what was left after business process reengineering removed much of middle management and flattened the organization. That middle management had provided much of the connective tissue of the organization. They provided the communication channels that kept the units from becoming silos. Knowledge management is now seen as the repair mechanism or the replacement process, presumably both more effective and less expensive than replacing those middle management and staff positions.

- Communities & Collaboration

Most of the concrete applications of Knowledge Management described to date consist of creating and supporting communities of shared interest and information need. These communities might be sales representatives in a pharmaceutical company or those persons at the World Bank and among their clients interested in road transport and logistics. In some cases, as in the former the community exists formally and hierarchically or as in the latter it exists informally and horizontally. At the World Bank for example there are now 70 some „knowledge areas" grouped into 15 larger sections; at IBM there are 49 „competency networks". The intended consequence of these communities is not only knowledge sharing, but also collaboration, and thereby of course enhanced productivity.

- Tacit Knowledge

Tacit Knowledge is now the term for the knowledge that is in people's heads or in their own files, as distinguished from explicit knowledge that exists in documents or databases. Current knowledge management thinking is almost entirely about establishing the structure and the climate to enable and encourage those who have knowledge to share it. There is close to no mention of capturing that knowledge, particularly in the new somewhat tarnished sense of artificial intelligence and the „knowledge engineer" who would capture the expertise of the expert on diesel/electric locomotive repair trouble shooting before he retired.

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What there is, is the encouragement and the establishment of systems to enable the employee to submit a „best practices" description of how they accomplish something so that others can use it. The information may be screened and edited before it goes on the systems (particularly so for example for pharmaceutical companies who are subject to FDA (Food and Drug Administration) approval concerning what they may say about a therapeutic agent), but the knowledge is input by the user, not by a „knowledge engineer" or „knowledge manager".

This is an important point for librarians to recognize, that there has been substantial disillusionment in the business community with the very much over-hyped „artificial intelligence" and with the software packages and consulting firms that promised to set up A1 systems for companies. There have been A1 successes to be sure, but they have been at the tactical and near clerical level, monitoring credit card transactions for plausibility or likely misuse, for example. They have not been at the strategic level envisioned by the proponents of knowledge management nor have they been of the collaborative synergistic kind yielding competitive advantage. Librarians can make a contribution toward capturing tacit knowledge, but we must be careful to phrase our proposed contributions in terms of making tacit knowledge, accessible. Be very careful about suggesting that you are going to capture it and structure it. Yes, of course, an index or a thesaurus is a syndetic structure, but such phraseology will resonate poorly with management, and it will make you sound like a naive proponent of A1, someone who if listened to will cost money and yield little in the way of results.

- Incentives and Rewards
  Effective knowledge sharing requires rewarding those who input information into the system and who contribute something useful. Otherwise, what motivation do employees have to contribute information that will, for example, improve the performance of other sales representatives relative to their own? Changing cooperation and incentive systems is not something that organizations do readily, iit is an undertaking fraught with peril and with unintended and often unfortunate consequences. A frequent complaint among knowledge management system implementers is how slow and difficult it is to get top management to make such changes.

This of course does not impact librarians directly, after all, information sharing is what we were hired for. But as the importance of information creation and sharing is better recognized in the organization, then we can hope for some spillover effort to those who facilitate and make possible that information creation and sharing.

For that positive spillover to take effect however, we must have achieved recognition as key players in the knowledge management process.

- Customer Knowledge

    A pervasive theme in business discussion of Knowledge Management is the importance of including the customer in the scope of knowledge management systems so as to include and leverage this expertise. This is considered key for a number of reasons:

    better and more timely design of new products and services
    early warning and competitive intelligence
    customer commitment and loyalty
    the synergy of collaboration.

The emphasis here is upon exchange of knowledge, ideas, and opinions for example, not just the transaction data currently exchanged with just-in-time inventory or supply chain management systems.

- Top Management Support & Change Agentry

    Another major theme is that Knowledge Management is about a whole new way of operating, indeed the transformation of the organization. As such, knowledge management requires knowledge management professionals to be change agents, and that is turn requires top management support, and better yet is the direct involvement of top management if the effort is to be successful.

The obvious corollary here is that knowledge management is going to be an exciting place to be, not something which we can allow ourselves to be left out of.

One obvious question is - is this enthusiasm for knowledge management a flash in the pan, or is it here to stay?

For those of us in the library and information profession perhaps the most compelling bellweather indicators of the business communities perception of the importance of Knowledge Management are these:

- in IBM's 1997 annual report, Lou Gerstner, the president of IBM said that his goal was „to turn IBM into the world's premier knowledge management company", and

- the president of Donaldson, Lufkin, Jenette stated recently that not only do Knowledge Management systems add value to a company, but that DLJ analysts specifically look for the existence of knowledge management systems when analyzing a company's worth and its stock value.

These are anecdotal points to be sure, but they are certainly strong indications that knowledge management is here is a big way, and that it is likely to stay here.

Guidelines for the Librarian

Finally some guidelines for use in Seeking a Larger Role in Knowledge Management:

- You can make a contribution in regard to tacit knowledge (a hot topic), but describe your potential role as enhancing access to it. Be very careful about suggesting that you will capture it and organize it. Don't get tarred with the brush of artificial intelligence.
- Emphasize knowledge sharing and collaboration.
- Use the Knowledge Capital Components metaphor:

Knowledge Resources	+	Social Capital	+	Infrastructure

Librarians certainly have major contributions to make in both knowledge resources and in infrastucture. In social capital, the library is often perceived as a neutral and non threatening institution in which one may place one's trust.

- Knowledge Management will be an exiting process. It is not something we want to be left out of. For a librarian to be left out of the knowledge management may well result in being left out of the organization. That may sound dire, and it is, but it is the flip side of great opportunity.

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