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Think Tank By Tom Davenport

MAKING THE MOST OF AN INFORMATION-RICH ENVIRONMENT

The Future of Knowledge Management

The CIO Service Center

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The most common mistake made by futurists is to overstate technology progress. Technology changes will be incremental, and we've already heard about most of the technologies that will be widespread in 2005.

When we think of how knowledge will be managed in 10 years, all sorts of futuristic images come to mind. There will be Superfast Ethernet jacks on every knowledge worker's neck allowing knowledge downloads. Our heads will have swelled in "Brainiac" fashion to contain the increased knowledge of the new millennium. Intelligent agents (why are there never stupid agents?) will cruise the InterInterNet, seeking out juicy bits of knowledge wherever they hide. Pocket-sized "knowledge appliances" will pull relevant knowledge from wireless networks and display it on our glasses.

Even if you're a Harry Houdini, however, don't hold your breath until this vision becomes a reality. The most common mistake made by futurists is to overstate technology progress. Technology changes will be incremental, and we've already heard about most of the technologies that will be widespread in 2005.

The two currently leading technologies for knowledge management-Lotus Notes and the World Wide Web-will essentially merge, with database, replication and discussion capabilities combining with hypertext and multimedia features. Hypertext knowledge bases will become capable of generating their own linkages to other documents. Agents will be available, but usage will be restricted by security concerns. The most popular form of agent will perform keyword searches-no big advance over today. Finally, the problems that firms have today with security, 7-by-24 operations and remote access to knowledge databases will largely be resolved by 2005.

The most dramatic improvements in knowledge management capability over the next 10 years will be human and managerial.

Expert systems and neural networks are already being abandoned today, so it takes no Karnac the Magnificent to predict that they won't be a major force in future knowledge management. Good old algorithmic logic programs will be the workhorses of knowledge management, but they will be contained in object-oriented modules for easy maintainability. Individual programs will specialize in specific knowledge functions, e.g., diagnosis, configuration or prediction.

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Managers will be evaluated not only on how "successful" their decisions were, but also on the knowledge used in making them. The most successful firms in the future will make knowledge management every employee's responsibility-not just that of a select few.

But the most dramatic improvements in knowledge management capability over the next 10 years will be human and managerial. In the next couple of years, knowledge management will take off as a management enthusiasm. It will be fueled by some studies or even examples that demonstrate a linkage between knowledge management and economics-reduced costs or increased revenues. Every major consulting firm will (darn near already does) have a knowledge management consulting service. The trickle of titles like Chief Knowledge Officer, Intellectual Capital Asset Manager and VP of Knowledge Transfer will turn into a flood.

What will all these people do to facilitate the management of knowledge? The smart ones will eschew faddistry and lay the groundwork for knowledge management. They will address all of the key knowledge management resources-not only technology, but also people, content and economics. They will manage all stages of the knowledge management process from creation to use. In most of the process steps, there are already exemplary firms that have made dramatic progress on aspects of knowledge management. In 1995, they are bellwethers; in 2000 their approaches will be commonplace.

Since knowledge is information that is highly valued by people and has at some point resided in someone's brain, people are the most important resource in effective knowledge management. In the future as today, firms that excel at knowledge management will corner the market for people who are adept at creating and using knowledge. These people will be evaluated and rewarded for their knowledge activities. Managers will be evaluated not only on how "successful" their decisions were, but also on the knowledge used in making them. The most successful firms in the future will make knowledge management every employee's responsibility-not just that of a select few.

Successful knowledge transfer involves neither computers nor documents, but rather interactions between people. If you want me to absorb your knowledge, then spend time with me, work with me, do my job and let me do yours.

Knowledge management in the mid-90s is a matter of economic faith. In the mid-00s (is that what we will call it?), it will be a matter of economic certainty for those who succeed with it. These companies will calculate not only the costs of managing knowledge but also the benefits-in bad decisions averted, in products and services that better meet customer needs, and in wheels not reinvented. Today, the lack of a clear tie to corporate economics is holding back the concept of knowledge management. In the future, at least some firms will have made the connection between knowledge and money.

Several key processes govern how knowledge management works on a day-to-day basis. They include how knowledge is created by or extracted from employees, how it is distributed and accessed, and how it is transferred or lodged in new brains and applied to business problems and decisions. Again, all of these processes are found today in some leading firms; they'll be commonplace tomorrow and highly refined in the firms that have them today.

Knowledge creation is probably best performed today by universities. Whether the field is business or biology, the best creators of knowledge are academics. Consequently, businesses seeking to master this process may form innovative partnerships with universities in which the creation of applied knowledge is outsourced or done collaboratively. Of course, this will require enormous changes in how academics do their work, and they will no doubt resist. But governments seem increasingly disinterested in funding academic research, and this will be a powerful incentive to change.

Extracting knowledge that already exists in the minds of employees is a different type of process for generating knowledge. With no mind-melding on the horizon, future knowledge extractors will focus on rewards for knowledge, hiring good knowledge creators and providing easy-to-use tools for capture. There are also cultural and political barriers to knowledge

Kid's quote:

*Most people won't have any knowledge, because they could just look everything up in the computer. If there is a virus or somehow all the computers in the world are shut down, no one will be able to function and everything would just stop because of people's lack of knowledge.
--Noah P., Age 12*

extraction; I'll share my knowledge with you if you won't steal, misrepresent or misuse it. The firms that are best at extracting knowledge are consultants, particularly Andersen Consulting and McKinsey. The former emphasizes the use of extraction technology, specifically Lotus Notes; McKinsey & Co. Inc. emphasizes hiring and promoting the right people.

In the rosy future I envision, categorization and organization of knowledge will be a core competence for every firm. This will require strategic thinking about what knowledge is important; development of a knowledge vocabulary (and a thesaurus to accommodate near misses); prolific creation of indices, search tools and navigation aids; and constant refinement and pruning of knowledge categories. Knowledge editors will have to combine sources and add context to transform information into knowledge. In the future, the scarce commodity in knowledge management will be attention. No one firm does all these things well today, but the skills to do them are most commonly found among librarians and print journalists. Teltech Corp. does a good job of organizing expert knowledge; Trilogy Development Group organizes product knowledge well.

How do we get the stuff from knowledge repository to knowledge user? Technology plays a big role in this distribution process, of course, and will continue to do so. Firms need to convert from an information push strategy, in which we ship information and knowledge to those who might be interested in them, to a pull strategy. Those who need knowledge must seek it, and someone should be trying to make it easy for them. Hewlett-Packard Co. has a head start on the future in this area; the information design firm InForm Inc. also focuses on information pull.

But knowledge management in the future will involve more than distribution and access. Knowledge transfer means ensuring that someone receives and uses the knowledge in question. Successful knowledge transfer involves neither computers nor documents, but rather interactions between people. If you want me to absorb your knowledge, then spend time with me, work with me, do my job and let me do yours. The more time together the better. That means the airlines will not go out of business in the next 10 years. Who transfers knowledge well today? Two semiconductor firms come to mind: Sematech Inc., which generates knowledge for the entire industry and works relentlessly to transfer it, and National Semiconductor Corp., which transfers fabrication technology well.

Knowledge management success in the future, then, belongs not to the quick or the technically adept, but to the long-term investors and harvesters across multiple fronts. If you want to be good at managing knowledge in the future, now is a good time to start.

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