

Is KM just good information management?

Data, information and knowledge are points along a continuum

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SUMMARY

For nearly 25 years, managers have had to master data processing, information management and knowledge management (KM). The more cynical among them suspect that nothing more substantial than "terminological inflation" is taking place. Part of the problem is there is no hard and fast distinction between information and knowledge; information may be (theoretically) public and knowledge locked in people's minds, but for the purposes of KM they occupy a continuum of increasing value. And as Thomas Davenport and Donald Marchand point out, many KM projects have a significant element of information management; after all, people need information about where knowledge resides, and to share knowledge they need to transform it into more or less transient forms of information. But beyond that, KM does have two distinctive tasks: to facilitate the creation of knowledge and to manage the way people share and apply it. In the end, the companies that prosper with KM will be those that realize that it is as much about managing people as information.



The concept of knowledge management emerged several years ago at a time when managers' skepticism about business fads seemed to be at an all-time high. Was KM, they wondered, merely a different, more up-market label for information management? Their suspicions about the origins of KM were nurtured by several remarkable "coincidences":

- » Many early writers and speakers on KM (including the authors of this article) had previously written and spoken on information management;
- » Many tools deemed useful for KM (the Internet, Lotus Notes, search and retrieval software) had also been widely used to manage information;
- » Much of the "knowledge" found in KM repositories looked remarkably similar to information resources previously held in paper form (for example, directories of experts in companies).

An observer with an historical perspective might have been even more suspicious. For the previous 30 to 40 years of computer use in business, the information that had counted most was that which could be automated, which was usually called data -- highly structured, quantitative shorthand for real events and human attributes. What could be programmed and processed by modern computers in the form of data or transactions seemed more important than information confined to paper records and documents (which was nevertheless where most information resided).

In the 1970s and 1980s, as computer technology combined with networks and new software tools became available, businesses moved from data processing to information systems and document management. No sooner had people and organizations got the hang of dealing with data than managers began to aspire to information management. Suddenly, when they were starting to master that, knowledge management appeared.

The skeptic could easily conclude that nothing more significant than terminological inflation was happening. After all, people had been talking about the Information Age since the advent of data processing; perhaps by the time organizations really got to the point of managing information, they needed to dignify it with the term "knowledge."

The question we address in this article, then, is whether KM is really different from information management. We will argue that there is a large component of information management in KM, and that much of what passes for the latter is really the former. However, true KM goes well beyond information management in several ways.

It may be useful to try to shed some light on these overlapping terms. Generations of philosophers have wrestled with the deep meanings of knowledge; as business school professors, we feel obliged to offer a pragmatic definition.

Data, information and knowledge are points along a continuum of increasing value and human contribution. Data -- the signals about human events and activities that we are exposed to each day -- has little value in itself, although to its credit it is easy to store and manipulate on computers.

Information is what data becomes when we interpret it and put it into context. It is also the vehicle we use to express and communicate knowledge in business and in our lives. Information has more value than data and, at the same time, greater ambiguity -- as any manager will attest who has ever argued over how many interpretations the terms customer, order and shipment can have inside the same company.

Knowledge is information within people's minds; without a knowing, self-aware person there is no knowledge. Knowledge is highly valuable, because humans create new ideas, insights and interpretations and apply these directly to information use and decision-making. For managers, knowledge is difficult to manage in other people because (being mental) it is invisible and its extraction, sharing and use relies on human motivation.

In practice, it is difficult to determine exactly when data becomes information and when information becomes knowledge. We usually advocate spending little energy on classification and a lot of energy on adding value to whatever you have and advancing it along the continuum.

WHAT IS MANAGED IN KM?

For a 1996 research project, Thomas Davenport and colleagues examined 31 different KM projects, as they were called by their managers. What companies actually managed in these projects appeared to be a mixture of information, knowledge and perhaps a little data. Eighty per cent involved the creation of some kind of repository, which held a wide variety of items that employees might find useful: best practices, competitive intelligence, sales presentations, product documentation, and even cafeteria menus and bus schedules.

Many companies explicitly strove for one-stop shopping -- a single location for all the useful content anyone could desire. Certainly, much of it would need further digestion and interpretation before being considered high-value knowledge; therefore, it was probably information. But simply locating desired information in a large collection is one means of adding value.

Some repositories included what might be called "information about knowledge." This is information that guides the seeker to knowledge, whether in the form of a document or an expert. So-called knowledge maps and knowledge Yellow Pages or expertise directories describe a set of knowledge categories, the location of the knowledge and, in some cases, its condition and value. If one believes (as we do) that the most important knowledge is in people's heads, facilitating access to it through improved information management is an important part of KM.

The primary reason for this close link between information and KM is that people in organizations are constantly converting knowledge into various forms of information (for example, memos, reports, e-mails and briefings) and acquiring information from others to improve their knowledge. This continuous conversion of knowledge into information and information into knowledge is required because people cannot always share their knowledge person to person. There are constraints involving personal time and attention as well as the number of people who must be kept informed across time zones and geographical locations.

In addition, since organizations exist to achieve predictable results, their members are encouraged to share their knowledge. This occurs through improved management of information about where knowledge resides, how it can be deployed and reused, and when it can create greater business value through new ideas and innovations.

Previous approaches to KM benefit from the use of IT and improved information management practices. Some companies excel by developing their capabilities to collect and organize information about knowledge, to provide broad access to it, and distribute it over distances. But there are other aspects of KM that distinguish it from information management and do not rely on computers or telecommunications networks at all (or at best only tangentially). Unfortunately, these are its most difficult aspects, and they are the ones that most strongly differentiate organizations. The truly distinctive aspects of KM fall into two key categories: the creation of knowledge and the use of knowledge.

KNOWLEDGE CREATION

Knowledge creation is not a new subject, but it has recently been the subject of renewed investigation in the context of business. Books such as *The Knowledge-Creating Company* and *Wellsprings of Innovation* demonstrate a strong connection between knowledge creation and innovation in product and service development. Large Japanese companies such as [Canon](#) and [Sharp](#) and a few western companies such as [Chaparral Steel](#) and [Oticon](#) of Denmark have relied on knowledge creation to foster long-term innovation and strong business performance.

There are, however, bracing messages for companies wishing to replicate these companies' approaches to innovation. The Japanese companies that excel in this regard have a strong focus on tacit knowledge (essentially knowledge that is difficult to express in words); they motivate knowledge creation through bold visions of products and strategies coupled with organizational cultures that promote sharing, transparency and proactive use of knowledge and information. [Honda](#), for example, used the phrase "Let's gamble" to guide the creation of a new city car model. Japanese companies also have human resource policies (such as rotation of employees around different functions) that support their emphasis on tacit knowledge. Western companies are not likely to adopt such practices easily.

Among the few Western companies that specialize in knowledge creation and innovation, the sobering lesson is the pervasiveness of these orientations within their cultures. At Chaparral Steel and Oticon, for example, there is no division of knowledge labour: Knowledge-creation is everyone's job. Even the lowest-level worker is considered capable of designing production experiments and of working with customers to create new products and processes. There are no time clocks, no limits to sick leave, no special perks for managers, no specialists in knowledge creation.

Both companies have been successful in their industries, but their growth may be constrained by finding workers who want to be "knowledge creators." Other Western companies could try to emulate Chaparral and Oticon, but doing so would require highly committed executives and large-scale change.

The other aspect of KM that differentiates it from information management relates to the way people apply and use knowledge in contrast to information. Knowledge, like information, is of no value unless applied to decisions and actions in a purposeful business context. Many companies have worked diligently to "stock the shelves" of repositories with information about knowledge. However, they have paid far less attention to how effectively employees apply and use their knowledge, not just for operating today's business but for generating new ideas about tomorrow's business.

Knowledge application and use is a complex issue with several different dimensions. One is cultural. Does an organization's culture reward decisions and actions according to how people use and share their knowledge? Or is it content with widespread use of intuition and guesswork at the expense of organizing people and processes to apply the best knowledge, experience and skills to projects and tasks?

Are new employees hired in part because they are willing and able to apply knowledge to their decisions and actions? Basic intellectual curiosity is difficult to inculcate if not already present, and hiring policies should reflect this. If, for example, a prospective employee has not reviewed material about a company before going to work there, it is unlikely that he or she will begin to consult information about knowledge resources after arriving.

Another determinant of knowledge use is the design of processes for "knowledge work." Planning, marketing, product design and development, consulting and other business activities depend heavily on knowledge. If knowledge workers feel they have no time to use knowledge in the course of their work, or that it is inconvenient to do so, even the best repositories will not be used. Essentially a company must create links between these knowledge work processes and its KM processes. Every key activity should be examined to see how knowledge is imported from human brains and information sources. Conversely, managers should look carefully at how knowledge acquired by people in the course of their work can be exported and shared in the form of reliable information with the rest of the company.

There are several ways to help ensure that knowledge is used in knowledge work processes. One is to create specific roles for importing and exporting knowledge. Some professional services firms, among the most aggressive of industries in adopting KM processes, have created such roles. [Ernst & Young](#) calls them "knowledge stewards," [Andersen Consulting](#) "knowledge champions"; in both cases they work on client projects and facilitate the application of knowledge.

Another strategy is to design knowledge-oriented analysis into the phases of a knowledge work project or process. [Johnson & Johnson's Pharmaceutical Research Institute](#) and [W.L. Gore](#), the chemical company that makes Gore-Tex, have inserted reviews of knowledge already gained and knowledge still required into key points of the product development process.

A third approach to facilitating knowledge use is to program it into the IT systems that support knowledge workers. This approach was tried a decade ago in the "expert systems" movement; the most successful applications of that era had the objective not of replacing workers but supplementing their capabilities.

At [General Motors](#) and [DaimlerChrysler](#), for example, designers of new car and truck models use a "knowledge-based engineering" system that embeds a set of design rules into the computer-aided design system. The rules might specify the relationship of the width of the vehicle to its wheelbase or might suggest that an existing component be used instead of designing a new one. The challenge in this type of project is to bring the entire organization's design knowledge to bear while preserving room for individual creativity and innovation.

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