

A Knowledge Management System

A Discourse

By Frank McKenna

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A Definition

My thoughts first: "A computer cannot create knowledge (at least not yet; I am reliably informed that the year computers gain real intelligence and take over is 2020). Only a human being can create knowledge through the application of cognitive processes to information.

A Knowledge Management system is one that provides the user with the explicit information required, in exactly the form required, at precisely the time the user needs it." Or: "A Knowledge Management system is one that connects to all sources of knowledge."

When I conducted my research I was able to find literally hundreds of definitions of Knowledge Management (KM), a selection of which are included at the end of this paper. Because I am a software developer, a designer of knowledge management application software, my expertise is in KM systems rather than KM per se. My approach is therefore one of logic, systems and practicability; of putting something into practice to capture and systemize information.

I work at the coalface; I am not an academic. I am not sure we should even be trying to define KM or KM systems because the last thing we want to do is "lock down" the creative knowledge generation process. Woe betide the whole KM industry if some bureaucratic organization first invents and then mandates a precise definition of KM that all of us must be measured by and certified against. That would be a retrograde step in the development of KM, restricting everyone to a tied-down set of words that, no matter how complex, can never hope to adequately describe or keep up with the rapidly evolving KM process.

Why is it that bureaucrats the world over feel this overwhelming desire to lock everything down to a narrow and restrictive definition and then control it from that point on? Surely Copernicus broke the mold and showed how scientific progress had been muzzled for nearly fifteen hundred years because of dogma and a restrictive, narrow model? To paraphrase our ancient friend, "Yes, the world is indeed round and it does indeed revolve around the sun, so let's drop this stupid geocentric model and get on with some real science."

Yes, KM is hard to define because it means different things to different people and it continues to evolve. Let's not restrict evolution by applying and enforcing hard and fast, finite and restrictive definitions.

Please adopt the KM definition that best suits your objectives because, I assure you, everyone else will. Then reserve the right to modify your definition as KM evolves. You can always fall back on the oldest KM definition of all; that is, "A KM system is one that converts data to information and then facilitates the conversion of information to knowledge." Remember the timeline: data to information, information to knowledge and then knowledge to wisdom.

Information, not data

As a younger man I was lucky enough to be selected to be trained in mainframes at the company I worked for. This was the era of consoles, card readers and line printers. The closest we ever got to knowledge management was when the computer operator placed a foot-high stack of printouts from the line printer on the manager's desk every Monday morning. The manager was then told that he had "all the information he needed/requested". But, of course, he did not. All he had was data. It wasn't exactly raw (because it had been extracted according to selection criteria in a COBOL program), and it had been sorted, but it was still a long way from being usable information — and most of it ended up being drawing paper for kids at home or in the local schools (we were recycling long before the "Al Gore" effect).

I use the line printer output as an example of how we often confuse data with information and information with knowledge. Providing information isn't about giving someone everything. It is about analyzing data to select and present just the information the manager requested, precisely when he needs it (i.e., before the next management meeting). Let's call this the "facts"; not more, not less. A surfeit of facts confuses and complicates the cognitive process (processing). A deficit of facts inhibits and corrupts the cognitive process.

Once we have the facts, we can process those facts and make decisions (create knowledge). The quality of the decision relies on two things — the quality and completeness of the facts and the quality and completeness of the cognitive process. And this, in a nutshell, is what knowledge relies upon; high quality and complete facts and high quality and complete processing. Processing facts (information) produces knowledge. The veracity of that knowledge depends upon the veracity of the facts and the process. This is where we can recycle one of the oldest acronyms in the IT business; GIGO — garbage in equals garbage out.

Salient lesson — not all knowledge is correct or valuable or complete, so don't believe everything you read.

Information management or knowledge management?

An information management system massages data to produce information. A knowledge management system is an information management system with all the tools required to help you turn information into knowledge.

KM Objectives

Rather than being distracted by definitions let's set quantifiable and achievable objectives. We begin by asking a few simple but telling questions.

Why do you want or need a KM system?

1. What are the problems you are trying to solve?
2. What are the outcomes you are striving for?
3. What kinds of knowledge are you trying to create?
4. What kinds of information are you trying to access?
5. What sources of knowledge do you need to connect to?
6. What business processes do you wish to implement?
7. What will you use the knowledge for?
8. Who will be involved in the knowledge generation process?
9. Who won't be involved in the knowledge generation process?
10. Who will benefit from the KM process?
11. How will people benefit from the KM process?
12. How will the KM system affect your shareholders?
13. How will your KM system affect your stakeholders (your employees and suppliers)?
14. How will your KM system affect your customers?
15. Who will drive and manage the KM process (the Knowledge Manager)?
16. What authority will you give to your Knowledge Manager?
17. How will your business benefit from the KM process?
18. How will you know when you are successful?
19. How will you measure your success? What are your metrics?

20. What will be the overall benefit of achieving your KM objectives? How will you profit?

21. **What will be the effect if you do not achieve your KM objectives? What will be your loss? What will it cost you if you do not implement a KM system?

**I think this is the most important question and one every board should ask its senior managers. The above list is not definitive but it is a really good start. For example, I wouldn't be spending even one dollar on rolling out a KM system if my management couldn't answer each of the above questions.

Where to start?

Given that your management team has answered the twenty-one questions above, I would then ask them to add detail to the following key areas:

What sources of knowledge do you need to connect to?

For example:

- the Internet (URLs)
- your CRM database
- your ERP database
- your network folders
- emails
- instant messaging
- voice mail
- faxes
- RSS feeds
- your supplier's systems
- your customer's systems

What tools do you need?

For example:

- a relational database
- collaboration tools
- a search engine
- a data mining tool
- an Enterprise Content Management (ECM) or Knowledge Management system
- an Intranet
- training courses
- consultancy
- seminars

- manuals
- help screens
- templates
- a Workflow system

What business processes do you need?

Business processes are built using tools. But business processes should not be tools-driven.

Most organizations make the mistake of being tools-driven (sometimes called technology-driven); they select the tools first (e.g., SharePoint or Knowledgeone) and then try to work out what business processes can be implemented using the tools. It is really important to list out all your required business processes *before* selecting your tools. If you do this, selecting the right tools is easy (because you have a set of criteria they have to meet) and the implementation will be as short and trouble-free as possible.

We get several inquiries a week from organizations wanting a “knowledge management system”. In all cases to date, not one of those organizations has been able to articulate exactly what it is they mean by a KM system, what business processes they need to implement, or what their desired outcomes are; nevertheless, they are all in the market for a software solution. This is really putting the cart before the horse; worse, these same organizations expect us to clearly understand and articulate what they require (even before we make the first visit to their site) and are often surprised that we don’t have instant answers.

I try to explain to people that “I am not *that* smart”. I am not an expert in their business and, until I have conducted extensive interviews and analyzed their business practices, I have little or no idea what it is they are trying to achieve. But, in all cases, they want to buy a KM system first and then solve the other problems later. A KM system will not solve any problems; it is just another tool. It is not a KM solution, it is just one of the tools you will utilize to achieve your KM objectives.

In my opinion, selecting the KM system appropriate to your needs is the easy part; defining your KM needs is the hard part. And the hardest part of defining your KM needs is defining and listing your required business processes.

It is almost as if people assume there is a fixed, “standard” definition of what a KM system is and does — as we have already discovered, that is about as far from the truth as you can get. Like beauty, KM is in the eye of the beholder. Take the time (and it will take time and effort) to solicit from your staff all the desired business processes they expect from a KM system. For example:

- an “instant” (I love that term) search across all information, both structured and unstructured (all sources of knowledge);
- a way to automatically capture, classify, index and “structure” all customer related information;
- a system that automatically notifies the appropriate employee when thresholds are reached or events triggered;
- a system that includes a “push paradigm” feature to automatically keep customers informed;
- a system that automatically provides research staff with new articles and information in their chosen fields;
- a system that automatically or regularly (e.g., daily) “data mines” sales and inquiry data to advise senior marketing staff of changing trends; and
- a system that automatically, or regularly, “spiders” through competitors’ websites (URLs) and keeps your management team informed of the changing competitive situation.

What are your key outcomes?

You must be able to list at least five key, measurable objectives. They should be measurable in the most finite way, either in dollars or in other eminently quantifiable ways. For example:

- it will allow us to feed twice as many people a month;
- it will reduce costs by 37%;
- it will allow us to halve research and development times;
- it will raise customer satisfaction levels by 75%;
- it will increase collections by 45%; or
- it will reduce our carbon footprint by 75% (here is that “Al Gore” effect again).

Do you need a KM consultant?

I am not a big fan of calling in a consultant right at the beginning of the exercise (even though we are in the KM consultancy business). Basically, do you want the consultant — who, let’s face it, knows very little about your business — to tell you what you need, or do you want to direct the consultant and tell him/her what you need? I highly recommend the latter approach.

If you take my advice, you won’t hire a consultant until you and your key staff have researched and documented your KM objectives and reached some form of consensus. This last point is important. I have been to customer meetings where most of my time has been spent listening to senior executives argue among themselves about what it was they needed. What I would really like to say in these situations is, “Tell you what, guys, why don’t I come back in a month or two when you’ve finished this discussion? Right now, you’re just wasting your money and my time.”

I would not call in a KM consultant until such time as you can clearly articulate:

- the sources of knowledge you need to connect to;
- the tools you need;
- the minimum business processes you require; and
- at least five key outcomes to be achieved.

Then, by all means, call in an experienced KM consultant, but never, never, never allow them to hijack the exercise. The KM consultant must operate under the guidance of your nominated knowledge manager; the person you have chosen and authorized (i.e., given authority to) to drive and manage this exercise.

What features do you need in a KM system?

Now we are talking technical, in an application sense at least. Basically, any KM system should be a superset of an Enterprise Content Management (ECM) system, able to capture, index and retrieve objects of any type (e.g., images, drawings, voice mail, video, emails). In order to do all the things you are going to ask of it, it must have an array of “standard” features; those features that should be common to any modern ECM application solution. For example:

- metadata searches
- full text searches
- the ability to search across other repositories and sources of knowledge as well as its own database
- the ability to capture electronic documents and emails

- the ability to capture faxes and other forms of communication (e.g., voice, messaging)
- a secure relational database
- a powerful and easy-to-use user interface
- the ability to import data from any source
- the ability to export any data
- the ability to integrate to any system
- a powerful and flexible security system

Above and beyond normal ECM functionality it must be configurable enough to allow you to implement your particular and unique version of a KM system. We aren't talking accounts payable here; we are talking about building a system to your exact and specific requirements and being able to continue to develop and enhance that system as your KM needs evolve (as they will). The clue is the word configurability. Your chosen KM system must allow your staff or systems integrator to modify both the Data Model and any business process as your business needs evolve.

Summary

1. Don't bother struggling with the growing plethora of KM definitions; instead, just define what you need from a KM system.
2. A good KM system should empower your staff. It won't exactly turn them into superheroes but it should allow them to extend their contribution and to work faster and smarter.
3. A good KM system should be focused on your core business objectives.
4. A good KM system is needs-driven, not technology-driven.
5. A good KM system should make your business more competitive, more efficient and more profitable.
6. A good KM system should allow you to better service your customers and to raise their satisfaction level.
7. A good KM system should raise the job satisfaction level of your staff.
8. Don't go looking for a KM system until you have formulated and agreed on your KM needs.
9. A good KM system should connect to all sources of knowledge, including tacit knowledge.
10. A good KM system should be easy to navigate and search.
11. A good KM system should be flexible enough and configurable enough to adapt to your changing needs.
12. A good KM system produces timely, accurate, concise and precise information that you can utilize (process) to make high quality decisions.

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Knowledge Management Definitions

I am indebted to Sims Learning Connections for the following definitions:

<http://blog.simslearningconnections.com>

1. "Distinct but interdependent processes of knowledge creation, knowledge storage and retrieval, knowledge transfer and knowledge application." (Alavi and Leidner)
2. "The explicit and systematic management of intellectual capital and organizational knowledge as well as the associated processes of creating, gathering, organizing, retrieving, leveraging, and using intellectual capital for the purposes of improving organizations and the people in them." (ASTD Learning System Module-8)
3. "The process that attempts to facilitate the full generation and flow of knowledge within an organization." (Madelyn Blair)
4. "Focuses on defining the knowledge employees or systems use to perform activities and saving it in some format so that others can access it." (BPTrends)
5. "A system or framework for managing the organizational processes that create, store and distribute knowledge, as defined by its collective data, information and body of experience." (Bridgefield Group)
6. "...knowledge management is the process by which we manage human centred assets." "...the function of knowledge management is to guard and grow knowledge owned by individuals, and where possible, transfer the asset into a form where it can be more readily shared by other employees in the company." (Annie Brooking)
7. "A business process that formalizes management and leverage of a firm's intellectual assets. KM is an enterprise discipline that promotes a collaborative and integrative approach to the creation, capture, organization, access and use of information assets, including the tacit, uncaptured knowledge of people." (Business Resources Online)
8. "Unfortunately, there's no universal definition of knowledge management (KM), just as there's no agreement as to what constitutes knowledge in the first place. For this reason, it's best to think of KM in the broadest context. Succinctly put, KM is the process through which organizations generate value from their intellectual and knowledge-based assets. Most often, generating value from such assets involves codifying what employees, partners and customers know, and sharing that information among employees, departments and even with other companies in an effort to devise best practices." (CIO Magazine Tutorial)
9. "Managing tacit knowledge (held in an individual's brain in the form of know-how and experience) and explicit knowledge (recorded independently of humans)." (The Cura Consortium: Consultants in Information Management)
10. "The distribution, access and retrieval of unstructured information about "human experiences" between interdependent individuals or among members of a workgroup. Knowledge management involves identifying a group of people who have a need to share knowledge, developing technological support that enables knowledge sharing, and creating a process for transferring and disseminating knowledge." (eLiteral)
11. "KM refers to activities aimed at enhancing knowledge processing. These activities are interventions designed to affect how knowledge processing is done." (Joseph Firestone)
12. "The leveraging of collective wisdom to increase responsiveness and innovation." (Carl Frappaolo)
13. "...a discipline that promotes an integrated approach to identifying, managing and sharing all of an enterprise's information assets. These information assets may include databases, documents, policies and procedures, as well as previously unarticulated expertise and experience resident in individual workers." (Gartner Group Inc)
14. "The tools, techniques, and strategies to retain, analyze, organize, improve, and share business expertise." (Todd R. Groff and Thomas P. Jones)

15. "Knowledge Management is a business philosophy. It is an emerging set of principles, processes, organisational structures, and technology applications that help people share and leverage their knowledge to meet their business objectives." (David Gurteen),
16. "An entity's systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity in the sense of positive results in accomplishing its objectives or fulfilling its purpose." (Holsapple and Joshi)
17. "Knowledge management is...about retrieving, acquiring, and adapting corporate knowledge." (Tom Hresko)
18. "The art of transforming information and intellectual assets into enduring value for an organization's clients and its people." (Ellen Knapp)
19. "The process of systematically and actively managing and leveraging the stores of knowledge in an organisation" (Laudon, K.C. & Laudon, J.P.)
20. "Knowledge Management refers to the critical issues of organizational adaptation, survival and competence against discontinuous environmental change. Essentially it embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings." (Yogesh Malhotra)
21. "A process for optimizing the effective application of intellectual capital to achieve objectives. In an organizational setting, this would mean a systematic approach to getting an organization to make the best possible use of knowledge in implementing its mission, broadly viewed as either sustainable competitive advantage or long-term high performance. From the individual viewpoint, this can be extrapolated to mean optimizing the effective application of the individual's knowledge (their potential and actual capacity to take effective action in varied and uncertain situations) to achieve the individual's professional and personal goals." (Mountain Quest Institute)
22. "Knowledge management is the name of a concept in which an enterprise consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills." (SearchDomino.com)
23. "Knowledge Management is the explicit and systematic management of vital knowledge - and its associated processes of creation, organization, diffusion, use and exploitation - in pursuit of business objectives." (David Skyrme Associates)

Many more definitions of KM and KM systems can be found; there is almost an infinite number and an endless variety.



About Knowledgeone Corporation

Knowledgeone Corporation is a multinational software development company with offices in the United States and Australia. It has been a world leader in information management solutions for over 25 years, with over 150,000 users across 10 countries, including Australia, New Zealand, USA, United Kingdom, Canada, East Timor and Zimbabwe. Knowledgeone Corporation has a sophisticated set of products that are ideal for a diverse set of application areas including EDRMS, KM, CRM, HR, Asset Management, Records Management and Enterprise Content Management (ECM).