Introduction

When the chief executive of a state association left his post to assume the responsibilities of President and CEO of a national organization, he told his fellow state execs he expected "continued disrespect."

He got it.

By "disrespect," the chief executive meant he wanted to continue the free and open dialogue he had enjoyed with his colleagues at the grassroots level.

His emphasis on communication soon generated an avalanche of faxes, sharing the association's political events and day-to-day policy development with constituencies across the country. In the spirit of "disrespect," his colleagues responded bluntly: "Stop the fax machine!"

At the time it was just a good-natured test of a new association executive's management style. But in another part of the business world, significant events were taking place that mirrored the association exec's dilemma. Fortune 500 companies had spent billions of dollars installing information technology and developing communication networks that would meet the challenge of the Information Age. They too were disappointed in the outcome. Computers and file cabinets became choked with unused data and information which were rarely accessed by workers who were uncertain about their roles and overwhelmed by the enormity of it all.

It was not news in the association world that information and the need for networked intelligence is at the center of what an association does. But when the industrial world awoke to the fact that the worth of their companies depended largely on what they knew in an exploding new knowledge-based economy, the earth moved.
Managing knowledge and information suddenly became as important as managing financial capital or physical plant. As industry urgently searched for ways of managing the knowledge asset, it became clear that the old military command-and-control model of the industrial past would not work in the knowledge era. And the knowledge asset, for the most part, wasn't exactly corporate property stored somewhere in the company warehouse. It was to be found in the heads of its knowledge workers. Although not yet expressed in financial statements, employees became assets, not liabilities - they held the knowledge.

Because the knowledge asset has been elevated in the business world, associations no longer have a captive market. Paul S. Forbes, founder of The Forbes Group, Fairfax, Virginia, a strategic management consultancy for associations, observes that historically the principal product of associations has been information. "But with the explosion of the World Wide Web, associations' lock on information has been pried open and their constituents increasingly demand net-time knowledge that won't wait for snail mail or the next convention."

The challenge to associations runs even deeper than technology. Big Six accountancies, executive management consultancies and countless communication specialty groups recognize the stakes and have jumped on the bandwagon.

Add to this phenomenon an accelerating demand for speed in the processing of knowledge. Ken Derr, chairman and CEO of Chevron, said: "Every day that a better idea goes unused is a lost opportunity. We have to share more, and we have to share faster." A report in January, 1998, by the U.S. Labor Department reveals that the race for knowledge also impacts the nature of the work itself. A two-year study shows that up to 70 percent of workplace learning is accomplished on-the-fly, calling into question the value of formal training programs that are presented in their own good time and costing as much as $50 billion annually.

This is the environment in which associations now work. It is full of threat: that members in search of knowledge may find the association less relevant after they turn to another knowledge resource. And, it is full of opportunity: that members may discover renewed and increased value in an association that becomes an effective partner in the knowledge chase. Whether an association is a winner or victim depends on whether it is quick to understand and respond to the new environment. Clearly, an association must learn how to do more, better -- organize, manage and deliver the right stuff on time, at the right time.

Associations will have to adapt quickly. They will need to rethink what they're doing, how they're doing it and why. They'll need to tear down barriers and antiquated processes; replace them with a systematic approach to knowledge-sharing based on the dynamics of a changing knowledge market.
From lessons learned by early adopters of knowledge management, we know we need to understand what knowledge is, find out who has it, reorganize operations to nourish and manage it, change the work culture to support it and build knowledge networks around it.

Understanding knowledge

With stocks trading on the international market at an average of six times their companies’ material worth (Microsoft at 15 to 1), the business community is keenly aware that its value is more deeply embedded in what it knows, not what it owns. This revelation extends to all organizations, whether profit or not. But the bigger shock comes with the realization that an estimated 80 percent of the knowledge asset isn't owned. It's not in computers; it's not in file cabinets -- it's "rented." It clocks out every night when the employees go home.

Knowledge, then, is people-based. It's information that has been processed, analyzed, distilled and packaged by the human mind.

Information is not knowledge. That became painfully clear during the Information Age when organizations invested heavily in information technology only to find themselves drowning in vast in-house caches of meaningless and unused data. Now they are inundated externally with even more mega-tons of information, unfiltered on-line. Organizations that do not understand the difference between knowledge and information will fall once again into the technology trap.

Auditing knowledge

If knowledge is an asset, it has to be managed just the same as the financial and physical assets of the Industrial Age were managed. It is estimated that 70 to 80 percent of what our workers know is hidden. We don't know what we know and we don't know who knows it.

Can you imagine such a scenario in the Industrial Age? If an organization didn't know what its tangible assets were or who had them, it was likely headed for bankruptcy? Even though much of knowledge is intangible, it is the primary asset and the knowledge audit is an essential precursor to managing it.

Here are some of the basic questions of a knowledge audit:

- What does your organization know?
- What doesn't it know?
- Who needs to know it?
- Who knows what?
• Are they inside or outside the organization?
• Do your leaders understand knowledge?
• The value of knowledge?
• Are they leading by example?
• Does your organization systematically organize and transfer knowledge internally?
• Is it systematically acquiring and sharing knowledge outside the organization?
• Are you creating new knowledge?
• Are you leveraging knowledge to benefit your members and the association?
• Do you measure or assign value to the knowledge asset?
• Is your work environment knowledge friendly?

Restructuring for knowledge

One of the reasons our knowledge is hidden is a top-down and fragmented organizational structure. With few exceptions, associations will discover through a knowledge audit that they are poorly organized to do business in the Knowledge Age. Unless they've recently restructured with knowledge management in mind, their operations are likely patterned after the top-down hierarchies of an industrial past.

Knowledge-focused industries, such as IBM, Monsanto, Dow Chemical, and the management consultancies, have already begun a transition from the old "command and control" model to a decentralized, collaborative approach more conducive to innovation and knowledge-sharing. Associations will need to consider the same. Managing the flow of knowledge requires a much different strategy than managing the movement of parts on an assembly line.

The organizational structure of a knowledge-based association will abandon the linear organizational chart and replace it with a modular structure similar to that used by Monsanto's Life Sciences Company. Functions will replace departments in a cluster of interconnected modules that encourage inter-disciplinary collaboration and the natural formation of knowledge networks. It will form an organization without walls that reaches across internal barriers and outward to embrace members, non-members, even perceived competitors.

Changing the work culture

If confusion isn't the best description of today's work culture, it will become so when knowledge workers hear that the new management strategy considers knowledge and knowledge workers as valuable assets and that knowledge management calls for everyone to break out of the old work patterns to
initiate, innovate and share knowledge freely. Forgive them if they are suspicious.

For most of their professional lives, they have fit themselves comfortably into professional pigeonholes where they do their best to meet the performance standards of narrowly defined job descriptions. They have left the "big picture" up to the "front office" and taken comfort in the fact that their jobs are secure as long as they do their assigned tasks and keep their noses out of other people's business. Further, workers have assumed that the more they know the more secure their jobs are. This culture discourages out-of-the-box thinking and abets knowledge hoarding.

Then their faith that individual knowledge would protect them was shattered during the era of business process reengineering. Cost accountants saw the most knowledgeable workers as an expense, a liability that could be eliminated through down-sizing. As a result, many organizations pushed large quantities of their intellectual assets out the door. Those who were left saw an ugly message - knowledge is a liability both to the employer and the employee. Worse, knowledge hoarding may have been replaced by a new culture of knowledge hiding!

Into this cultural confusion comes the knowledge movement. Although some associations may not quite fit this worst case profile, some of it will likely apply. History will have to be overcome.

Management consultancies have first-hand knowledge of that fact. Before they began selling knowledge management consulting, they tried to practice it. International networks of consultants were expected to communicate through newly-created computer networks by sharing their own problem-solving experiences with other consultants whose clients had similar problems. They didn't. That's when the cultural barrier became clear. Consultants, after all, are in the business of selling their own knowledge; so, why share it, even with one's own colleagues. And besides, they were far too busy working with their own clients to take time out to help other consultants help theirs.

Changing the culture will be the most difficult step in creating a knowledge-based association. It must begin by establishing (or reestablishing) an environment of trust and mutual benefit.

Building knowledge networks

Knowledge management cannot be layered on top of an already-existing work process. In an open, knowledge-based organization, interdepartmental cooperation and collaboration must become an integral part of the daily routine. Teams will not be appointed; they will form naturally in a knowledge-friendly environment through the free flow of information and ideas, leading to
common goals that are dependent on the interaction of skills, knowledge and resources of cross-functional groups (not teams).

Individuals will not only be aware of "the big picture" but actively involved in shaping it from the bottom up. No longer will the organization's best thinkers wait for directives from on high. Groups will not be limited to staff participants. In fact, knowledge networks should provide an interactive link with every conceivable knowledge resource, not the least of which is the members.

When members become directly involved in the interaction of a knowledge network, they will be the communicators -- not the recipients -- of communication and they will be much less likely to yell "stop the fax machines." In fact, they will be actively involved in solving problems not pointing to them through the traditional market study approach to member satisfaction.

While knowledge networks are forming naturally in such a positive environment, the systematic management of networks will be essential if all this energy is to be productively directed toward the goals and objectives of the organization. We can just as easily be overwhelmed by "knowledge overload" as information overload. Knowledge itself is a seemingly limitless resource, but handling knowledge has its limits. Strategic thinking, planning and action are just as important in selecting and managing knowledge networks as in begetting committees. Decentralization must not mean disorganization.

The knowledge-driven organization needs leadership from the governing board, the chief executive and the management team. They will be the knowledge champions. At the same time, someone will have to assume the important new role of knowledge manager and it will be difficult to find the person who will fit the position profile. Colleges aren't turning out knowledge management professionals just yet, although a few business programs are beginning to offer the course. Meanwhile, the new knowledge manager will likely be found in one of those old pigeonholes we hope to abolish.

Information management specialists see the opportunity and many are campaigning for the knowledge manager's job. But while they talk "knowledge," it sounds too much like "information" -- remember, 80 percent of knowledge isn't in computers. Human resource and education professionals have some of the skills needed by a knowledge manager and they are moving up to the position. But they too bear the burden of narrow backgrounds.

One answer to this dilemma might be the formation of the first network, made up of a blend of talented people from operations, human resources, education, communication, member services, marketing and information services. No one person possesses all that knowledge, but this little network would. Then the network coordinator (they don't have "chairmen" authority figures) could act as knowledge manager. That would not only provide a solution to the problem but demonstrate the very purpose of knowledge networking.
**Utilizing computer technology**

Even though this article warns against the "technology trap," information and communication technology has an exciting role to play as the great enablers of knowledge networking. But they are the medium, not the message. Once human networks are formed, the application of interactive technology can succeed because it will be layered on a new knowledge community with a need for the mutual sharing of knowledge and ideas. The power and effect of knowledge will be amplified far beyond the limits of time and space and the association will be a valuable resource in the virtual world.

Technology is such a vital player that leaving it until later would be just as fatal as letting it dominate the initiative. Educating computer techs to the true meaning of knowledge cannot begin too soon and selecting computer consultants should be based in part on their ability to pass the quiz -- define knowledge; describe the role of technology in managing knowledge; tell us how much you know about our knowledge needs.

**Getting started**

There are those who believe that knowledge management is just another fad. They are wrong. It is as certain as the knowledge economy and the prevalence of the knowledge work that demands it. There is much yet to be learned about managing knowledge, but a wait and see attitude will seriously jeopardize the future of any association.

Now is the time to get started. The knowledge audit is a good beginning. It will help develop an understanding of the knowledge need and assess the capacity of an association to be the knowledge leader in its field. It will defeat fear of the unknown and set the wheels in motion for strategies, planning and action which can retain the association's position as the premier source of expert knowledge and information for its members.
Knowledge Management: making sense of an oxymoron

Can knowledge be managed? The words management and knowledge at first sight appear uneasy bedfellows. Knowledge is largely cognitive and highly personal, while management involves organisational processes. Many knowledge workers do not like to be managed in the traditional sense. However, knowledge is increasingly recognized as a crucial organisational resource, that gives market leverage. Its management is therefore too important to be left to chance. This briefing paper outlines what steps senior managers should take to leverage the knowledge in their organization.

Momentum of Knowledge Management

The last few years have seen a rapidly growing interest in the topic of knowledge management. 'Leveraging Knowledge for Sustainable Advantage' was the title of one of the first conferences (in 1995) that brought knowledge management onto the management agenda. From 1997 a surge of books, magazines and websites have come onto the scene. Today (2003) most large organizations have some form of knowledge management initiative. Many companies have created knowledge teams and appointed CKOs (Chief Knowledge Officers). Knowledge is firmly on the strategic agenda.

Why Now?

The level of interest has been building for several years. Many innovative companies have long appreciated the value for knowledge to enhance their products and customer service. Our analysis indicates several reasons why the level of interest has grown dramatically during recent years:

- **Globalization and competition** - many organizations rely on knowledge to create their strategic advantage. With available knowledge widely dispersed and fragmented, organizations often waste valuable time and resources in 'reinventing the wheel' or failing to access the highest quality knowledge and expertise that is available.

- **Knowledge can command a premium price in the market** - Applied know-how can enhance the value (and hence the price) of products and services. Examples are the 'smart drill' that learns how to extract more oil from an oil
field, and the hotel chain that knows your personal preferences and so can give you a more personalized service.

- **Restructuring and downsizing** - Without effective mechanisms in place to capture knowledge of experienced employees, organizations make costly mistakes or have to pay again for knowledge they once had on tap.

- **Sharing of best practices** - Companies save millions a year by taking the knowledge from their best performers and applying it in similar situations elsewhere.

- **Successful Innovation** - Companies applying knowledge management methods have found that through knowledge networking they can create new products and services faster and better.

These and other benefits, such as improved customer service, faster problem solving and more rapid adaptation to market changes, have resulted from an explicit focus on corporate knowledge as a strategic resource.

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What is Knowledge Management?

Knowledge management is the *explicit* and *systematic* management of *vital knowledge* and its associated *processes* of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge than can be widely shared throughout an organization and appropriately applied.

Our research shows that companies adopt two broad thrusts in applying knowledge management:

1. Sharing existing knowledge better - making implicit knowledge more explicit and putting in place mechanisms to move it more rapidly to where it is needed;
2. Innovation - making the transition from ideas to commercialization more effective.

Knowledge management programs typically have one or more of the following activities:

- Appointment of a knowledge leader - to promote the agenda, develop a framework
- Creation of knowledge teams - people from all disciplines to develop the methods and skills
- Development of knowledge bases - best practices, expertise directories, market intelligence etc.
- Enterprise intranet portal - a 'one-stop-shop' that gives access to explicit knowledge as well as connections to experts
- Knowledge centers - focal points for knowledge skills and facilitating knowledge flow
• Knowledge sharing mechanisms - such as facilitated events that encourage greater sharing of knowledge than would normally take place
• Intellectual asset management - methods to identify and account for intellectual capital.

Examples of Success

Our cases database has over 100 examples of organizations that have achieved significant benefits through knowledge management. Here are just a few examples:

• BP - by introducing virtual teamworking using videconferencing have speeded up the solution of critical operation problems

• Hoffman La Roche - through its Right First Time program has reduced the cost and time to achieve regulatory approvals for new drugs.

• Dow Chemical - by focusing on the active management of its patent portfolio have generated over $125 million in revenues from licensing and other ways of exploiting their intangible assets.

• Texas Instruments - by sharing best practice between its semiconductor fabrication plants saved the equivalent of investing in a new plant.

• Skandia Assurance - by developing new measures of intellectual capital and goaling their managers on increasing its value have grown revenues much faster than their industry average.

• Hewlett-Packard - by sharing expertise already in the company, but not known to their development teams, now bring new products to market much faster than before.

Guidelines for Success

Our research has identified a number of recurring success factors:

• A knowledge leader or champion - someone who actively drives the knowledge agenda forward, creates enthusiasm and commitment

• Top management support - a CEO who recognizes the value of knowledge and who actively supports the knowledge team in its work

• A clear value proposition - identification of the link between knowledge and the bottom line business benefit; new measures of performance and appropriate rewards.
• A compelling vision and architecture - frameworks that drive the agenda forward

• Creation of a culture that supports innovation, learning and knowledge sharing. This is usually supported by appropriate reward mechanisms.

• A technical infrastructure that supports knowledge work - from simple knowledge support tools to Intranets and ultimately more sophisticated groupware and decision support. Simulation, data mining and good document management also have a role.

• Systematic knowledge processes, supported by specialists in information management (librarians) but with close partnership between users and providers of information.

Usually, the knowledge agenda develops through a process of evaluation from pilot projects that are used to build capabilities and derive learning for subsequent applications.

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**Issues and Challenges**

The biggest challenge reported by those practitioners we have met, is that of changing the culture from "knowledge is power" to "knowledge sharing is power". Other common obstacles are:

• Finding time - with so many initiatives vying for attention, it is easy to sideline more challenging issues like knowledge management. However, those organizations that have committed resources and have knowledge champions have achieved outcomes that far surpass the level of inputs

• Introversion - afraid to learn from outsiders or expose internal operations to customers

• Too focused on detailed process - rather than the big picture and the more chaotic process of knowledge creation

• Treating it as one-off project or quick-win - knowledge management is a commitment to the long-term: the organization’s future prosperity.

• Individual disciplines and 'turf wars' - knowledge management goes beyond the remit of any single function or discipline. All functions must collaborate.

• Organizational recognition and reward systems usually do not sufficiently recognize knowledge contributions. They are linked to traditional financial measures.
None of these challenges are insurmountable. Implementing successful knowledge management requires a systematic change and project management approach. However, it is more than just a project. Over time knowledge management changes the way that people work so that their individual knowledge is more effectively harnessed for the benefit of all.

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Knowledge Management: More Than Just Know-how

People sometimes interchange the terms "know-how" and "knowledge", but there's a world of difference! Systems vendors are falling over themselves to sell you so-called "integrated knowledge management solutions", but these are rarely more than glorified information management systems with go-faster stripes. If we fail to understand knowledge in all its facets, then there is a danger that in doing so we miss out on the most valuable aspects of knowledge management and end up delivering a system-driven solution, rather than a cultural shift towards sharing and learning from experience.

**Know-how** is the processes, procedures, techniques and tools you use to get something done. This kind of knowledge can't always be captured in its entirety - imagine trying to write down your know-how on "how to ride a bicycle"! Some things are simply best learned from combination of know-how and experience.

**Know-why** relates to strategic insight - understanding the context of your role, and the value of your actions. It's the "big picture" view of things. Why are we doing this? Where are we trying to get to? What would happen if we didn't do it? Where do I fit in all of this? Think back to your first ever job. Did anyone explain to you why what you did was important, or were you just expected to "get on with it" and not ask stupid questions? Know-why is a key to lifting morale and generating commitment and buy-in from staff.

**Know-what** is the facts required to complete a task, it's the information needed in order to take a decision and it's the things you need to collect together before making something. This kind of knowledge can be captured and embedded into systems, scripts and processes.

**Know-who** includes knowledge about relationships, contacts, networks, who to call on for help. It's the "I know a man who can" factor. All of us apply and build up this type of knowledge on a day-to-day basis, often subconsciously. If your role is sales-oriented, you'll know just how important know-who can be. The degree to which the know-who in your organisation can be accessed will be a reflection of your culture. How easy is it to find the right people? When you do find them, are they willing to give you the benefits of their experience? Are networks and communities of practice supported and encouraged in your organisation?

**Know-where** is that uncanny ability that some people have for navigating through and finding the right information. You probably know people in your office who fulfil this role, functioning like human search engines! In his bestseller "The Tipping Point", Malcolm Gladwell describes these people as connectors. If you visit Yahoo!, or one of the other major Internet portals, you'll be in a knowledge-rich environment where most of the content is know-where - links to where relevant know-how (and often know-who) can be found on the web.

Finally **Know-when** is the sense of timing - to know the best time to do something, to make a decision, or to stop something.

Conclusion

Knowledge is a many faceted gem - to truly extract the value, you will need to look beyond "know-how", and polish-up your organisation's performance in a wider range of areas. By doing this, you will move far closer to having an integrated strategy for managing knowledge.
Keys to Successful Communities of Practice (Networks)

How can I make my community of practice truly effective?

How can I prevent my network becoming a "notwork"?

Communities of practice (networks) lie at the heart of successful knowledge management in most organisations. They are the lifeblood of informal exchanges of knowledge. Typically, communities go through a series of stages as they develop. This article, drawn from a best-selling knowledge management fieldbook by its author, identifies the key steps involved in creating and sustaining a successful community of practice, providing practical hints and tips for every part of the lifecycle.

The guidelines below are drawn from the book "Learning to Fly - Practical knowledge management from leading and learning organisations" by Chris Collison and Geoff Parcell), and sets out a number steps to launching, energising and sustaining communities of practice (networks) in an organisation.

1. Planning Gather together a list of potential participants. Use referral - ask individuals if they can recommend others in the organisation who should participate. Consider a broader membership to introduce diversity. Would your network benefit from having members NOT closely associated with your domain of interest - to bring in a different perspective?

2. Decide: go/no-go Check for duplication or overlap with other networks/groups, verify the need for the network and make a clear go/no-go decision. Is the scope realistic, or is the subject area too broad for a single network? Take some soundings from potential members and consider splitting to form two or more sub-networks if appropriate.

Getting started

3. Hold a face-to-face start-up workshop Ensure that this includes a social activity to build relationships and trust. If most of the interactions are likely to be via e-mail or telephone, it is important to build relationships face-to-face.

4. Draft a "charter" collectively Develop a simple "charter" which may include:
   - the rationale and scope for the network,
   - the key roles (facilitator, sponsor etc.),
   - the expectations in terms of people's time commitment (do members need help in securing "air cover" from their managers?),
   - a "code of conduct" - how members will work together, and key processes/tools,
   - a sense of "what success looks like", and any appropriate KPIs. (but avoid over-burdening a network with measures at the early stages of its growth)

5. Consider tools for support Check the available tools and their distribution across the members, particularly for a network which crosses organisational boundaries.
6. Appoint a facilitator The responsibilities of the Network Facilitator, some of which, in practice, may be shared with others in the network, may include:

- organising network meetings/teleconferences;
- maintaining network distribution lists;
- owning and ensuring the maintenance of shared information/knowledge resources;
- monitoring the effectiveness of the network, and stimulating and prodding network members when appropriate;
- acting as a focal point for the network, both internally and for those outside the network.

Note - a network facilitator need not be the "subject expert". Far more important is the ability of that person to involve and include others, and to work behind the scenes to keep the network "on the boil".

7. Set up an e-mail distribution list and send a launch e-mail Establish an e-mail distribution list for your network comprising the potential membership names identified. This should facilitate further communication. The Network facilitator should be identified as the owner of this, and can add or delete people from this distribution themselves. Send an initial e-mail to kick off the dialogue.

**Building momentum**

8. Seed the discussion with some questions Establish the behaviours by asking a question on behalf of a member with a particular need (have the members do it themselves if possible). In the early stages it is important to demonstrate responsiveness. The facilitator should be prepared to pick up the phone and press for answers behind the scenes.

9. Publicise the network What communications media exist within your organisation? Can you write a short news article in a relevant internal or external magazine which describes the network and its aims?

10. Advertise quick wins When you get answers to questions, or the transfer of ideas between members, celebrate and make sure that everyone knows.

11. Monitor activity... Monitor the discussion forum/Q&A effectiveness:

- Frequency of contribution,
- Frequency of response.
- Number of unanswered questions
- For larger networks - number of joiners/leavers.

12. Maintain connectivity Schedule regular teleconferences, summarise successes, develop a list of "frequently asked questions" and a shared team space/website.

**Renewing commitment**

13. Refine the membership For large networks, send an e-mail to existing members reminding them to let you know if they would like to be removed from the list. Better to have a smaller group of committed members, than a larger group with variable commitment.
14. Maintain face-to-face meetings Consider an annual face-to-face meeting to renew relationships and introduce any new members.

15. Keep the focus on business problems Continue to solicit questions and answers - publicise more success stories.

16. Review performance How is the network performing in relation to its performance contract, mission, KPIs? Are there still regular examples of success stories?

17. Test commitment Don't be afraid to threaten to "switch off" the network and test the response of members. People will soon object if they strongly believe in it!

Is it time to "sunset" your community? Or to reinvent it? Consider Options Decide for the future:

- Continue?
- Celebrate & close?
- Redefine the deliverables/scope?
- Divide into sub-networks?

Conclusion

Launching and supporting successful communities of practice is one of the most effective ways to sustain your investment in knowledge management. It takes thought and effort to get started, but with the right people, and the steps outlined above, they can bring KM to life in any organisation.
Leadership Behaviours Which Encourage Knowledge-Sharing

The concept of knowledge management or knowledge sharing makes intellectual sense to the leadership teams in most organisations. Why wouldn't we want to learn from our successes and failures, and translate that learning into value?

However, there is often a gap between the conceptual understanding, and their own behaviours as leaders - and that can be a problem - How do you engage leaders both intellectually and emotionally, in a way which will make a difference to their day-to-day behaviours? It requires more than a set of competency frameworks!

The examples below are taken from the bestselling fieldbook: "Learning to Fly - Practical knowledge management from leading and learning organisations", written by Chris Collison and Geoff Parcell.

Example 1) In BP, well known for its knowledge-sharing culture, the senior leadership developed a habit of reinforcing "learning from others" when they visited operational sites. Imagine the scene: the Director or Senior VP arrives, and is given the usual tour of the site. They sit down with the management team and review the performance of the business against a set of stated KPIs. One of these KPIs is currently not being met. What happens when they identify this issue?

"Have you thought about approach X? Addressed performance issue Y? Changed widget Z?"

..will generate one set of behaviours.

"Who else have you spoken with at other sites who might have a similar issue?"

..will drive a very different set of behaviours.

This is the route that BP has chosen to take; senior management visits are opportunities to reinforce the value of learning from others, rather than opportunities to underline their seniority by providing "the answer".

Example 2) When the senior directors from energy and essential services company, Centrica, met to discuss how to improve knowledge sharing in the company, they agreed a set of practical "leadership challenges" for senior managers across the organisation:

- How can I personally demonstrate that "asking for help" is a sign of strength rather than weakness?
- When encountering a business problem, how can I reinforce the importance of learning from others - rather than simply providing an answer?
- When reviewing a project or investment proposal, have I challenged to ensure that it brings to bear knowledge from other projects?
- How do I react when someone fails - is it purely a loss to the business, or is it an investment in their education?
- Do my team see failure as something to learn from, or something to cover up?
These kind of questions and challenges bring to life the notion of knowledge management in a tangible, practical manner.

What would work in your organisation? If you could issue five challenges to your senior team, what would you choose?
Knowledge Management - Capturing And Structuring Knowledge into Reusable Assets

Many organizations have an approach for identifying and recording lessons learned, perhaps as part of a post-project review or similar process. Unfortunately, lessons learned reports have a tendency to end up on a shelf gathering dust, or lost in the un-chartered corner of a fileserver somewhere. Let's get real. How many people will really trawl diligently through a number of lessons learned documents in order to glean some key point? The reality is, if you can motivate employees to initiate any kind of "learning before doing" activity, then you're doing pretty well.

Remember the last time you packed your bag in preparation for a business trip?

All those things you need to remember? Tickets, passport, currency, itinerary, contact, driving license, power adaptor, Ipod?

We manage to remember the things we need for our business trips without going through each past suitcase-packing experience in our minds, one by one. Somehow, we maintain a meta-level list in our memories. And yet, when it comes to lessons learned, we expect people in our organizations to work through a pile of lessons learned reports in the hope that a key insight will leap out at them?

We need to find ways to package knowledge into easily accessible "knowledge assets" - structured with a customer in mind.

The steps below are taken from the best-selling fieldbook "Learning to Fly - Practical knowledge management from leading and learning organisations", written by Chris Collison and Geoff Parcell. They don't require sophisticated, bespoke technology just willingness to think-through and structure what has been learned.

1. Identify a customer for this knowledge. Have a clear customer - current or future - in mind when considering the creation of a knowledge asset.

2. Get clear what your knowledge asset is really about. What is the scope of your knowledge asset? A knowledge asset needs to cover a specific area of business activity.

3. Identify a community of practice relating to this subject. The community will be the source of the knowledge initially, the users of the knowledge in immediate term, and the people who have an on-going responsibility for validating the future contents of the knowledge asset. This is key? or there is a real risk that you will end up with an electronic time capsule - a snapshot in time of the way things used to be done - rather than the current, prized know-how in your organisation.

4. Collate any existing material upon which you can base your knowledge asset and look for general guidelines. Provide some context so that people can understand the purpose and relevance of the knowledge asset. Are there general guidelines that you can distil out of this material?

5. Build a checklist illustrated with examples and stories. The checklist should tell the user of the knowledge asset:
"What are the questions I need to ask myself?"
"What are the steps that I need to take?"

Illustrate it with examples, stories, pictures, digital photographs, models, quotes, video and audio clips if possible.

6. Include links to people. Create a hyperlink to the person's personal home page or e-mail address wherever you mention them in the text. Include a list of all the people with any relationship with the content. Use thumbnail photographs if you have them available.

7. Validate the Guidelines. Circulate the guidelines around the community again, and ask "Do the guidelines accurately reflect your knowledge and experience?" "Do you have anything to add?"

8. Publish the knowledge asset. Store the knowledge in a space where it can be accessed by its community. Often this will mean the company intranet.

9. Initiate a feedback and ownership process. Encourage feedback from users, so that they pick up and eliminate any invalid recommendations. Instil a sense of obligation that "if you use it, then you should add to it".

Over time, you'll build up a series of knowledge assets which relate to the key practices in your organisation? the areas which can bring competitive advantage. The creation of these tangible knowledge assets provides a focus for the communities of practice associated with each one, and ultimately will give credibility to your knowledge management efforts.
Creating a Sustainable Yellow Pages System

How can I "know who knows" None of us can personally know more than around 250 people, yet we want our companies to be smart, learning organisations where it's easy to find the right person to talk to. This is why many organisations create "yellow pages" applications, which enable employees to find and contact other staff with particular expertise and skills. However, these systems can be fraught with difficulty in their implementation, and often end up as out-of-date, glorified intranet telephone directories. This article, drawn from a best-selling knowledge management fieldbook by its author, identifies ten key steps involved in creating and sustaining a successful, employee-owned yellow pages system.

The guidelines below are drawn from the book "Learning to Fly - Practical knowledge management from leading and learning organisations" by Chris Collison and Geoff Parcell), and sets out ten key steps to creating a yellow pages systems which really works, and has the positive buy-in of its user community - that is to say, its customers.

1 **Maintain a clear and distinctive vision.** Be clear about what you are trying to achieve and avoid compromise. Beware of becoming "all things to all men" - particularly those in the HR and IT departments! Everyone will want a slice of the action - don't lose sight of the overarching aim of your system - making it easy to find people that you don't already know.

2 **Strive for personal ownership and maintenance.** Create a process whereby only the individuals concerned can create and update their entries. This will drive a far deeper sense of ownership across the population.

3 **Strike a balance between informal and formal content.** Encourage people to share non-work information about themselves in addition to valuable business information. Consider prompting for this with "fun" questions such as: "what was the first single that you bought?", "what is your favourite film?", or even "what makes you happy?".

4 **Support the photographs wherever possible.** Nothing is more powerful and personal than a photograph. It speaks volumes about the person, raises the interest levels of others and generates personal ownership of the content. If possible encourage people to include an informal photograph. The security-pass-rabbit-in-the-headlights shots rarely show people in their best light! Better to have a photograph which says more about the person and what motivates them.

5 **Ensure that your product design is flexible and inclusive.** Recognize that different people relate to templates, prompts and structure in different ways. **Use focus groups** to test opinion.

6 **Start with a customer-facing pilot.** Critical mass is all important, so start with a group of people who have a natural need to be visible to internal customers. This might include supporting functions, existing networks or communities, or even business areas with new leadership.

7 **Deliver through local enthusiasts.** Centrally-driven push isn't always the best way to engage the workforce. Tap into local enthusiasts and champions if possible? they will know how best to "sell" the concept locally.
8 Use success stories as a marketing tool. Reinforce the usefulness of the knowledge directory at every opportunity. Publicize any examples or successes widely, and early, to reinforce your project. This is a culture change project, and culture change happens one story at a time!

9 Encourage use, but lead by example rather than edict. Avoid mandating the population and use of the knowledge directory. People will provide better quality content if they feel that they are volunteering the information. At the end of the day, you can't ever conscript knowledge - you can only ever volunteer it. And let's face it, there's little point in finding the one person with expertise or experience that you need, if when you call them on the phone, they're unwilling to talk!

10 Embed into people processes. Look for process and intranet "hooks" that could initiate and sustain the use of your knowledge directory (e.g. recruitment or induction of new staff, the launch of new networks, any reference on an intranet site which mentions a person's name can become link to their personal page.

Conclusion

Creating and marketing a yellow pages system inside an organisation is a highly rewarding project - seize the opportunity with both hands. You'll need a network of champions, the cooperation of the IT and HR functions, tenacity and some marketing flair. The steps outlined above should help you on your way. Bon voyage!
Conducting an After Action Review

Introducing a learning culture into organisations can be difficult at times, particularly if the effort required it great and the benefits aren't quickly identifiable.

After Action Reviews (known as AARs) are one of the simplest knowledge management techniques, and have been used to great effect in organisations ranging from the US Army, to BP, and even in the development sector in NGOs like TearFund. Their power comes from the fact that they take little time, generate rapid results, and the approach can be easily learned and repeated. In summary, they have a "low barrier to entry".

So how do you conduct an AAR?

AARs are a simple way for individuals and teams to learn immediately, from both successes and failures, regardless of the length of the task in question. The learning is by the team, for the team. The format is very simple and quick - it's a "pencil and paper" or flipchart exercise. In an open and honest meeting, usually no longer than twenty minutes, each participant in the event answers four simple questions:

- What was supposed to happen?
- What actually happened?
- Why were there differences?
- What can we learn from that?

The guidelines below are drawn from the book "Learning to Fly - Practical knowledge management from leading and learning organisations – Chris Collison and Geoff Parcell), and sets out the key steps to facilitating an effective After Action Review.

1. **Hold the AAR immediately.** AARs are carried out immediately whilst all of the participants are still available, and their memories are fresh. Learning can then be applied right away, even on the next day.

2. **Create the right climate.** The ideal climate for an AAR to be successful is one of openness and commitment to learning. Everyone should participate in an atmosphere free from the concept of seniority or rank. AARs are learning events rather than critiques or audits. They certainly should not be treated as personal performance evaluation. The US Army describe an environment where "you pin your stripes to the wall" before starting an AAR.

3. **Appoint a facilitator.** The facilitator of an AAR is not there to "give" answers, but to help the team to "learn" answers. Learning must be drawn out, both from the individual and for the group's learning.

4. **Ask "what was supposed to happen?"** The facilitator should start by dividing the event into discrete activities, each of which had (or should have had!) an identifiable objective and plan of action. The discussion begins with the first question: "What was supposed to happen?"

5. **Ask "what actually happened"?** This means the team must understand and agree facts about what happened. Facts - not opinions. Remember, the aim is to identify a problem or learning point - not a culprit!
6. **Now compare the plan with reality.** The real learning begins as the team of teams compares the plan to what actually happened in reality and determines “Why were there differences?” and “What did we learn?” Identify and discuss successes and shortfalls. Put in place action plans to sustain the successes and to improve upon the shortfalls.

7. **Record the key points.** Recording the key elements of an AAR (initially on a flipchart) clarifies what happened and compares it to what was supposed to happen. It facilitates sharing of learning experiences within the team and provides the basis for a broader learning programme in the organisation.

That's all there is to it. Why not build an AAR into the agenda of your next major team meeting, training event, negotiation or project review meeting? You'll be surprised at how quickly you learn what you didn't know.
<table>
<thead>
<tr>
<th>KM Self-Assessment</th>
<th>KM Strategy</th>
<th>Leadership Behaviours</th>
<th>Networking</th>
<th>Learning before, during and after</th>
<th>Capturing knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 5</strong></td>
<td>Clearly identified Intellectual assets.</td>
<td>Leaders recognise the link between KM and performance. The right attitudes exist to share and use others’ knowledge. Leaders reinforce the right behaviour and act as role models.</td>
<td>Clearly defined roles and responsibilities. Networks and CoPs have a clear purpose, some have clear deliverables other develop capability in the organisation. Networks meet annually.</td>
<td>Prompts for learning built into business processes. People routinely find out who knows and talk with them. Common language, templates and guidelines lead to effective sharing.</td>
<td>Knowledge is easy to get to, easy to retrieve. Relevant knowledge is pushed to you. It is constantly refreshed and distilled. Networks act as guardians of the knowledge.</td>
</tr>
<tr>
<td><strong>Level 4</strong></td>
<td>Discussions ongoing about organisation’s Intellectual assets. A KM strategy exists but is not linked to business results. A clear framework and set of tools for learning is widely communicated and understood.</td>
<td>KM is everyone’s responsibility; a few jobs are dedicated to managing knowledge. “Knowledge sharing is power.” Leaders set expectations by “asking the right questions”, and rewarding the right behaviours.</td>
<td>Networks are organised around business needs. Networks have a clear governance document. Supportive technology is in place and is well used.</td>
<td>Learning before, during and after is the way we do things around here. “Customers” and partners participate in review sessions.</td>
<td>Just-in-time-knowledge is current and easily accessible. One individual distils and refreshes it, though many contribute. That individual acts as the owner.</td>
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<tr>
<td><strong>Level 3</strong></td>
<td>There is no framework or articulated KM strategy. Some job descriptions include knowledge capture, sharing and distillation. People are using a number of tools to help with learning and sharing.</td>
<td>KM is viewed as the responsibility of a specialist team. Some leaders talk the talk, but don’t always walk the walk!</td>
<td>People are networking to get results. Networks are created</td>
<td>People can easily find out what the company knows. Examples of sharing and using are recognised. Peers are helping peers across organisational boundaries.</td>
<td>Networks take responsibility for the knowledge, collects their subjects knowledge in one place in a common format. Searching before doing is encouraged. Little or no distillation.</td>
</tr>
<tr>
<td><strong>Level 2</strong></td>
<td>Most people say sharing knowledge is important to the organisation’s success. People are using some tools to help with learning and sharing.</td>
<td>Some managers give people the time to share and learn, but there is little visible support from the top.</td>
<td>Ad hoc networking to help individuals who know each other.</td>
<td>People learn before doing and programme review sessions. They capture what they learn for others to access. In practice few do access it.</td>
<td>Teams capture lessons learned after a project. Teams look for knowledge before starting a project. Access to lots of knowledge, though not summarised.</td>
</tr>
<tr>
<td><strong>Level 1</strong></td>
<td>A few people express that knowledge is important to the organisation. Isolated people with a passion for KM begin to talk and share how difficult it is.</td>
<td>KM viewed as a management fad. Leaders are sceptical as to the benefits. Leaders think networking leads to lack of accountability. “Knowledge is power”</td>
<td>Knowledge hoarders seem to get rewarded.</td>
<td>People are conscious of the need to learn from what they do but rarely get the time. Sharing is for the benefit of the team.</td>
<td>Some individuals take the time to capture their lessons in any number of cupboards and databases. They are rarely refreshed, few contribute, even fewer search.</td>
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Lessons Learned and How To Identify Theme

Many organisations use the term "lessons learned" to describe the way in which they avoid repeating mistakes, or ensure that they build on past successes, yet a lesson can only be applied if it has been successfully identified, and captured first. Even in "learning organisations" who profess to be good at knowledge management and knowledge sharing, the process for identifying lessons learned can lacks rigour or depth. All too often, lessons end up as "motherhood and apple pie" statements, and end up in reports on shelves gathering dust (or its electronic equivalent).

The guidelines below are drawn from the book "Learning to Fly - Practical knowledge management from leading and learning organisations" – Chris Collison and Geoff Parcell), and set out ten key steps to facilitating a "lessons learned" review.

1 Call the meeting. Hold a face-to-face meeting as soon as you can after the project ends, within weeks rather than months.

2 Invite the right people. The project leader needs to attend, as do key members of the project team. If a similar project is already underway, then there is great value in the new project team attending - a "customer" for the knowledge.

3 Appoint a facilitator. Identify a facilitator who was not closely involved in the project. The facilitator should be someone who can ask questions from an independent, but non-threatening standpoint. This isn't an audit, it's an investment!

4 Revisit the objectives and deliverables of the project. Ask "what did we set out to do?" and "what did we achieve?"

5 Go through the project step by step. Revisit the project plan and identify any deviation from plan. Where were the delays, and what went ahead of schedule? What changed and why?

6 Ask ?what went well?? Ask "what were the successful steps towards achieving your objective?" and "what went really well in the project?"

Ask a "why?" question several times. This is vital, and will get you to the root of the reason. Don't take the initial response at face value. Often people don't even realise what the underlying reason behind a success or failure is. Your role may involve guiding them on a voyage of discovery (without regressing them to their childhood!).

7 Find out why these aspects went well, and express the learning as advice or guidelines for the future. This is a key point. Try to avoid expressing lessons learned in a passive, past tense, such as: "Project Foxtrot completed ahead of schedule because the project team remained in-tact throughout the design and execution stages".

The lesson will be far more accessible to others if it is expressed as:

"On time-critical projects, ensure that the project team remains consistent throughout the design and execution stages of the project. This will eliminate any learning-curve issues due to the take-on of new staff".
As the facilitator, acknowledge feelings and press for the facts. Ask "what repeatable, successful processes did we use?? and how could we ensure future projects go just as well, or even better?"

8 Ask "what could have gone better?" Ask "what were the aspects that stopped you delivering even more?" Identify the stumbling blocks and pitfalls, so they can be avoided in future by asking "what would your advice be to future project teams, based on your experiences here?"

9 Ensure that participants leave with their feelings acknowledged. Ask for "Marks out of ten" and "What would make it a ten for you?" to access residual issues.

10 Record the meeting. Use quotes to express the depth of feeling. Express the recommendations as clearly, measurably and unambiguously as possible, using the guideline format explained in point 7. Take a photograph of the project team, and ensure that you record contact information (e-mail and telephone) to make follow-up conversations easy for anyone reading the lessons learned. Ensure that you circulate the write-up around the participants for comment, and permission to use specific quotes before sharing more widely.

Conclusion

Identifying and recording lessons learned is fairly straightforward process, given the simple set of steps above and a measure of facilitation skills. Of course, identifying the lessons is only part of a knowledge management cycle; lessons learned, and the guidelines that they spawn, have no intrinsic value. The benefits come from ensuring that the lessons are actually applied - which is another story!
Organizations are complex organisms. For an organization to grow and prosper in this information age, it must become a learning organization understanding both its roots and branching out to new endeavors. One of the difficulties in mastering "Knowledge Management" is understanding the terminology of the field. In any field one must have a common understanding of the nomenclature of both the terms and concepts. People use the same words and phrases but the meaning could be different based on gender, location, context, profession, etc. This document defines terms, borrowed from other fields such as computer science, business, psychology and education that may be applied to knowledge management in organizations. Throughout this document I use the term "organization" rather than business. All organizations, profit making, non-profit, and voluntary, share some of the same needs for sound knowledge management practices. Even non-profit organizations must use sound business practices to ensure prosperity.

Knowledge management is a conscious, hopefully consistent, strategy implemented to gather, store and retrieve knowledge and then help distribute the information and knowledge to those who need it in a timely manner. The strategy includes rules, procedures, and cultural aspects in addition to the hardware and software to help put the knowledge management strategy into action. The best computers and software are not useful without the people and procedures for using them. Knowledge management is a framework and management mind-set that includes building on experience and creating new avenues for exchanging knowledge. The strategy includes both the technological infrastructure and the human aspects that uses the tools.

The progression for a learning organization is: data, information, knowledge, and wisdom. Data and information are gathered; knowledge and wisdom are applied as a result of analysis.

**Analysis** is the process of interpreting data and information. One may order the data for easier interpretation or take the raw data and use it to create information and wisdom. Analysis requires data input and outputs something based on the data, experience, and previously learned wisdom of the people involved. *

**Artificial ignorance** occurs when truth is sacrificed in favor of reverence or ritual. People practice artificial ignorance when they behave without thinking about the reason behind the actions. They follow the rules, practices, procedures, or law exactly without thinking of the implications and results. A fictional and humorous example of this behavior is Amelia Bedilia in the books by Peggy Parish.
**Artificial intelligence** occurs when analysis and the search for truth takes precedence over the creative and human activities of a job. People who practice artificial intelligence behave with so much thinking and analysis that the feeling, intuition, and art of making decisions is sacrificed.  

**Barriers** are objects, ideas, practices, structures, systems, etc. that prevent or discourage action. Sometimes physical barriers are necessary for physical safety. Security barriers are important for an organization to protect assets. Barriers are not good when they discourage, sharing, creativity, service and other forms of positive business activity.  

**Cataloging** is the systematic organization of information, data, or materials so that they can be retrieved when the requester needs them. Cataloging follows rules and practices to enable users to understand the system. Putting words in alphabetical order in a dictionary or index is one example of cataloging. Alphabetical order has rules so that the lexicographer and the end user can find words. A librarian-cataloger follows rules established by national and global organizations. The rules are flexible enough to enable interpretation and localization. Rules also include controlled vocabulary for subject headings. A business cataloger follows the business rules of the organization.  

**Explicit Knowledge** is the captured and cataloged information and knowledge that is made ready for people to use.  

Sometimes within businesses the term, **taxonomy**, is used for the classification of knowledge. A good taxonomy or catalog enables the same knowledge to be accessed via multiple paths.  

**Classification** is a system of arranging ideas or physical objects in hierarchal and enumerative schemes. Schemes may be based on national standards such library classification systems (for example: Library of Congress Classification, Dewey Decimal Classification, or National Library of Medicine Classification) or internally developed. Classification systems arrange materials in an order. In libraries multiple orders may exist such as reference collections, children collections or branch libraries. In businesses multiple orders many include departments, branches or other segregations of materials. Library classifications are based on subjects. Business classifications are based on logical arrangements for each business. Linear or systematic arrangements impose limits on the classifiers. The classification of digital documents does not have physical and temporal limits on accessibility as books or physical documents. Numbers, letters or symbols are the shorthand codes for arranging materials. These codes help people who don't have expert knowledge of the subjects store and retrieve materials in the correct places.  

For classification systems to work they must 1) Encompass the whole field of knowledge or business activity and allow for future revisions; 2) Be systematic 3) Be logical; 4) Be flexible enough so that new subjects may be inserted without dislocating current materials; 5) Be kept current; and 6) Employ
terminology that is clear, consistent, and unambiguous for the classifier and end users.

Communities of Interest include the people within the organization or those outside the organization who share interests in an aspect of the business or profession. For example professional staff may join professional organizations to share common interests and offer each other support. This is especially important when the organization has few people in that profession. Within the organization staff may share business interests separate from their professional interests. These communities may be formal and organized such as professional organizations or informal such as people talking to people in other departments about common business interests.

People are linked by proximity, electronic communications, printed documents, published articles, or books. Electronic links could include Internet mailing lists, wikis, RSS, web sites, or news groups. Print resources may include newsletters, trade journals, professional periodicals and scholarly journals. Members of the community do not possess equal levels of expertise, but they are associated by their desire to share and learn from others. The nature of the association changes and develops over time. A neophyte may need a lot of support at the beginning and later evolve into knowledge provider.

Communities may or may not be open to all who wish to join. professional organizations may place educational or experience requirements on membership. Restricted membership organizations are communities of practice for experts. In businesses, these experts, based on their knowledge, are designated for specific subjects. Other groups may be open to anyone who wants to contribute, share, or learn.

Culture Culture is a combination of organizational history, shared experiences, group expectations, unwritten or tacit rules, ethics, and social interactions that affect the behavior of everyone in the organization. Culture is developed dejure (organizational rules and pronouncements from upper management) and defacto based on shared experience. Culture is a complex social structure. Sometimes it evolves slowly based on worker actions and sometimes change is enacted by management. We simultaneously participate in many cultures such as families, localities, religious groups, nations, and organizations. One culture may permit an action, while another forbids it.

In organizations culture can be consciously changed with a new rule from an executive. Culture can als be changed by external stimuli (for example a new law or government regulation that affects business practices). If culture places barriers to sharing knowledge, the organization needs to take actions to create an atmosphere that reduces barriers and becomes more supportive and collaborative.

Data are the smallest units of measure. The word is technically the plural of datum but often used as a singular. Data are the components of information. They may be the 1's and 0's of computer memory, names and addresses in a
demographic file, or the raw facts and figures before interpretation. Data are stored in data bases. Data processing is the electronic manipulation of data.

**Data Mining** (also known as Knowledge Discovery in Databases - KDD) is extraction of implicit, previously unknown, and potentially useful information from data bases. The process uses machine learning, statistical correlations, statistical analysis, and sophisticated search strategies to extract data in such a way that the information is easily comprehensible. Then the human decides how to turn this information into knowledge. The source data bases are usually already owned by the organization. Data mining is frequently used by marketing departments to learn more about customers and how to better market products and services. The skilled knowledge manager will help create data base search strategies that enable successful data mining. However, in some ways data mining is the antithesis of what a knowledge manager is trying to accomplish in an organization. A knowledge manager sets up systems to store and retrieve information on a timely basis; a data miner seeks information in data bases that was previously underutilized.

**Discussion Forum** is an in-person or electronic forum for staff or like-minded individuals to exchange ideas, post questions, offer answers, or offer help on relevant subjects. Electronic forums also provide ways of archiving (or storing) and searching for previous exchanges. "Listserv" is a type of electronic forum.

**Ideas** are mental pictures, or dreams that are unproven. They may or may not be verbalized or recorded. They are not yet substantiated by data, but may be based on the person's knowledge. Good ideas may have a positive impact on the organization if they can be substantiated or validated by data or input from others. Bad ideas are those that have no ability to be implemented. Both good and bad ideas may help in the process of determining the best course of action.

**Ignorance** is the state of not knowing. Ignorance occurs when those who can benefit from knowledge are unwilling or unable to find or assimilate the knowledge. The flip side of ignorance is having knowledge and not having any way of sharing that knowledge.

**Information** is organized data that has been arranged for better comprehension, understanding and/or retrieval. What is one person's information can become another person's data.

**Intellectual Capital** is the same as the knowledge asset of an organization. Knowledge assets help achieve business goals. This capital is the set of intangible assets that includes the internal knowledge of employees have of information processes, external and internal experts, products, customers and competitors. Intellectual capital includes internal proprietary reports, libraries, patents, copyrights, and licenses that record the company history and help it plan for tomorrow.
**Knowledge** is the result of learning. Knowledge is the internalization of information, data, and experience. **Tacit Knowledge** is the personal knowledge resident within the mind, behavior and perceptions of individual members of the organization. **Explicit Knowledge** is the formal, recorded, or systematic knowledge in the form of scientific formulae, procedures, rules, organizational archives, principles, etc., and can easily be accessed, transmitted, or stored in computer files or hard copy.

**Knowledge Management Staff** are the people in the organization assigned the task of providing the leadership and implementation of the policy for the creation, capture, storage, cataloging, and sharing of organizational knowledge. Sometimes the organization appoints a chief knowledge officer (CKO) and sometimes the tasks are performed by other managers. The person in charge is the focal point or switching point for all knowledge related tasks. This person works with those in technology, human relations, and operational units to create the requisite infrastructure and management policies. Alternative job titles for the person in charge of knowledge management might be director of knowledge mobilization, director of global knowledge exchange, and senior vice president over strategic knowledge capabilities.

A **Knowledge architect** is the staff member who oversees the definitions of knowledge and intellectual processes and then identifies the technological and human resources required to create, capture, organize, access and use knowledge assets. Architecture is the technology and human infrastructure to support the organization's KM initiatives. It includes physical (e.g., hardware and tools) and logical (e.g., knowledge policies) dimensions.

**Knowledge assets**, also called intellectual capital, are the human, structural and recorded resources available to the organization. Assets reside within the minds of members, customers, and colleagues and also include physical structures and recorded media.

**Knowledge audit** is the formal process to determination and evaluation of how and where information knowledge is used within the organization. The audit examines policies, forms, procedures, storage and any other ways that knowledge is collected, stored, cataloged and stored.

**Knowledge bridge** is the connection that a KM expert builds between the business processes and the technological, sociological, personal, financial, sales, creative, and customer oriented functions of the organization. Building a knowledge bridge is the 'glue' making the long-term connections between the functions that sometimes compete for resources.

**Knowledge creation** is the process that results in new knowledge, or organizes current knowledge in new ways making techniques to use existing knowledge. Once knowledge is created the organization has a **Knowledge flow**, which is the way knowledge travels, grows, is stored and retrieved. Knowledge flows 1) Up and down from management; 2) Within circles of sharing (such as shared interests between staff performing similar or
complementary roles) 3) Through planning, investigation, and training; or 4) Through common sources such as books, reports, data bases or knowledge bases.

**Knowledge facilitators** help harness the wealth of knowledge in the organization. Facilitators engender a sense of ownership in those involved, by helping them arrive at a jointly developed solution.

**Know-how** is the technical expression of knowledge or how to physically apply knowledge in the physical world. Examples are the manual and mental skills of a master craftsman or tradesman.

**Knowledge lens** is the perspective or viewpoint of the problem or situation. A KM expert brings experience from many industries or disciplines to focus valuable insights or illuminate new ideas. Through this lens the KM expert synthesizes the situation and helps makes sense of disparate pieces.

**Knowledge map (K-Map)** is a tangible representation or catalog of the concepts and relationships of knowledge. The catalog is a navigational aid that enables a user to find the desired concept, and then retrieve relevant knowledge sources.

**Knowledge source** is the person, document, non-print source, or place that is the origin or prime cause of knowledge. Others may see you as a source and you turn to your own sources for knowledge.

**Knowledge owner** is the person or people who are responsible for knowledge, a knowledge domain, or set of documents. The knowledge owner is responsible for keeping the knowledge and information current, relevant, and complete. The knowledge owner usually acts at a local or decentralized level. The knowledge owner may or may not be the author or creator of the specific content. The owner may be the expert in the subject area or a skilled editor.

**Knowledge use** is the effective integration of knowledge by people or organizations. It is the result of understanding and application of knowledge and the knowledge gathering process. It is hard to define because it is the result and application of all the terms defined on this page.

**Knowledge worker** is a member of the organization who uses knowledge to be a more productive worker. These workers use all varieties of knowledge in the performance of their regular business activities. Everyone who uses any form of recorded knowledge could be considered a knowledge worker.

Alternative job titles for person in charge of knowledge management: *Director of knowledge mobilization, Director, global knowledge exchange, and Senior VP, strategic knowledge capabilities.*

**Learning** is the complex process of assimilating stimuli and changing behavior. The stimuli can be received by any of the senses. Many learning
situations use stimuli of multiple senses. For example one listens, practices with the hands, and then explains. Learning happens in situations when people are using their minds best. Learning styles vary by person and situation. While most people learn with a combination of seeing, hearing, and motion (tactile or physical), some people show a preference to one of these types of input or stimuli. Adults as well as children learn using a methodology that is suitable for their condition and the subject they are learning. Everyone has to figure out what methodology and stimuli combination works best for them and the job of a teacher is to help the student in this journey of discovery. Learning is a process that is self perpetuating because each step of learning creates a foundation for the next step.*

An alternative view of the definition of **learning** -- Learning in the context of a business is a process to acquire knowledge or skills to enhance the ability to perform business or professional activities. The end result is the person can help better the business's bottom line. Learning helps an individual or group work better, faster, more efficiently, or smarter.

**Management** is the organizational process that includes strategic planning, setting objectives, managing resources, deploying the human and financial assets needed to achieve objectives, and measuring results. Management also includes recording and storing facts and information for later use or for others within the organization. Management functions are not limited to managers and supervisors. Every member of the organization has some management and reporting functions as part of their job.

**Metadata** is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use or manage an information resource. The Dublin Core is an example of a standard. It was developed for libraries to be simple and concise. The current Dublin Core standard defines fifteen metadata elements (title, subject, description, source, language, relation, coverage, creator, publisher, contributor, rights, date, type, format, and identifier) for resource description in a cross-disciplinary information environment. A library catalog is an example of metadata for books and other library materials. A product catalog is metadata for the products a company sells or distributes.

Metadata has become a "buzz" word and is mis-used. In a library the catalog contains "metadata" on each item (book and non-books) in the library. In an organization "metadata" is used to describe the products, items, raw materials, or human resources. The human resources metadata contains the demographic description (name, address, office, etc.) for each person. The product metadata contain the name, physical description, quantity, etc. for each product bought and sold.

**Motivation** is the push of the mental forces to accomplish an action. Unsatisfied needs, motivate. On the biological level basic human needs of food, shelter and survival are powerful motivators. On the psychological level people need to be understood, affirmed, validated and appreciated. On the
business level motivation occurs when people perceive a clear business reason for pursuing a transfer of knowledge or practices.

**Personal Competence** is a collection of behaviors including concentration, intensity, persistence, and self-sufficiency. Concentration is required to examine, contemplate and make decisions. Intensity refers to the depth of involvement in an activity. Time is an important component of both concentration and intensity. One must invest the proper amount of time to accomplish the task. People must take the time to concentrate which enables persistence. Self-sufficiency is measured by the number and duration of responses that solve problems.

**Practices** are the techniques, methodologies, procedures, and processes that are used in the organizations to get the job done. Good practices are those practices that have fostered improved business results and continue to enable the organization to improve. Bad practices are those that are detrimental to good business results. Data are gathered to create information that is used to measure results and determine if the practice is good, bad, or worth further investigation.

**Best practices** are any practices, use of knowledge, or experience that have been proven by data or experience to be valuable or effective to individuals, groups, or organizations. These best practices may be useful or be applicable to others.

**Local best practices** are practices that have been used by a department or other unit of an organization. Based on analysis, these practices have been determined to be helpful to other departments or units of the organization.

**Industry best practices** are practices that have been determined from outside of the organization as helpful approaches to large numbers of organizations within that industry. These best practices may be reported in written sources based on investigative reporting or based on agreements or conventions of trade or professional groups. For example articles or books may be written about a practice that one company does that has improved their performance. This is a very common occurrence in the literature.

**Query** is a question or series of questions that are presented to a knowledge management system or information retrieval system. Data and information can be retrieved with a query. The most precise queries are those which return the fewest false drops. The result of a query needs interpretation by the requestor. A query may return sorted or unsorted replies.

**Relationships** are the connections people have with other people. Relationships may be between people with personal connections or those with connections based on print, media or correspondence. People absorb more knowledge when the bond is with someone they know and respect. Good relationships create a unity necessary to run effective organizations. One is more likely to share knowledge with those who share personal
Building relationships is a mutually helpful activity for creating interdependence.

Sharing is the human behavior that describes the exchange of knowledge. Sharing and learning are social activities and may occur in face-to-face meetings or via aural, written or visual stimuli. At least two people are required for sharing. Sharing knowledge is a positive activity in an organization. Coveting knowledge is the opposite of sharing.

Storytelling is the skilled delivery of stories used to present anecdotal evidence, clarify a point, support a point of view and crystallize ideas. A story can present material that research data can not. Stories use verbal pictures to spark interest, add variety, and change the pace of a discussion. Stories make dull speeches sparkle. Storytelling is the connecting device between data and reality. Stories can share a "truth" that data can not. Storytelling can help bridge the gap between data and knowledge. It also could be the result of integrating information. A well chosen story gets the audience's attention. Knowledge managers use storytelling as a device and tool for sharing knowledge. Storytelling allows you to present dreams and tell about the past. Click here for more on storytelling.

Technology is the set of tools both hardware (physical) and software (algorithms, philosophical systems, or procedures) that help us act and think better. Technology includes all the objects from basic pencil and paper to the latest electronic gadget. Electronic and computer technology help use share information and knowledge quickly and efficiently. What was previously slow and tedious is now easier and more realistic. Any tool has the potential to remove the tedium and repetition that will allow us to perform that which is most human—thinking, dreaming, and planning. *

Thinking is an internal mental process that uses data or information as input, integrates that information into previous learned material and the and results in either knowledge or nothing. It may occur at any moment including while eating, sleeping or working on an unrelated task. Problem solving, planning, information integration, and analysis are four kinds of thinking.

Wisdom is the result of learning and using knowledge for a strategic advantage. After gaining knowledge, wisdom is used to meet new situations. Wisdom resides in the minds of the users. Organizational wisdom is the goal of knowledge management system.

A version of this web page appears as a chapter in: Perspectives in Knowledge Management, published in May 2008 by Scarecrow Press.

* Changed since last revision.

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Note: This is a work in progress. It is not exhaustive and will have new terms and revisions added as needed. Please send me any ideas or comments to improve this list.
David J. Skyrme KM Terms

AAR. See After Action Review.

After Action Review (AAR). A systematic process to extract the learning from an event or activity. The process addresses the questions: What should have happened? What actually happened? What lessons are there for the future?

Answernet. A service provided by a network of experts who answer questions posed online.

Artificial Intelligence (AI). A set of computer techniques that make the computer appear to behave with a degree of human intelligence. Rather than the procedural way of programming, it draws on inferences and rules to guide its actions. Expert systems, intelligent agents and natural language search are examples of the use of AI techniques in knowledge management.

BBS. See Balanced Business Scorecard. Now a less common abbreviation than BSC.

Balanced Scorecard. A performance measurement system that incorporates a balanced set of measures, both financial and non-financial. It adds customer, internal processes and innovation and learning indicators to financial ones to provide a more balanced view. Contrast with the more specific intellectual capital measurement methods.

Benchlearning. A structured approach whose focus is on learning from others to create distinctive improvements. Developed by Bengt Karlof and colleagues, it overcomes the often narrow focus of benchmarking on quantitative comparisons, which downplays the key role of knowledge transfer. See also the Benchlearning® website.

Benchmarking. A systematic process for comparing the performance of an activity or process across a range of organizations or departments. Identifying gaps in performance leads to on to benchlearning and learning good practice from high performers.

Benefits Tree. A diagrammatic depiction of cause-effect relationships from knowledge processes to business outcomes. Helpful in making the business case for knowledge management. See also the Benefits Tree tool.

Best Practice. The distillation of accumulated wisdom about the most effective way to carry out a business activity or process. Since 'best' is highly subjective and context dependent, as well as implying that no further improvements are possible, many
people now prefer the term good practice. See also the article: Are Your Best Practices Really The Best?

BSC. See Balanced Business Scorecard.

Blog (originally Web log). A string of thoughts of an individual shown in chronological sequence on a Web page, often with hyperlinks to sources that have stimulated his or her thinking. A well established KM blog can be seen at David Gurteen's website, while the AOK website lists a selection of KM blogs. Although often dismissed as a gimmick some people see blogging as grass-roots KM, alongside storytelling. Others suggest that it perpetuates knowledge silos and that a Wiki is more appropriate. See also K-log and weblog

Bulletin Board. See Message Board

Case Based Reasoning (CBR). An application of AI techniques, where solutions to a given problem are sought through a reasoning process that draws analogies with similar problems whose solution is already known.

Caves and Commons. Denotes two main types of physical working area: a cave is a private area for concentrated thinking; commons are open areas for socialization and meeting rooms for team discussions. Design of working space can significantly enhance the productivity of knowledge workers.

Chat. See Instant Messaging.

Chief Knowledge Officer (CKO). A senior executive, often at board level with responsibility for an organization's knowledge agenda. Unlike other officers, they may not manage a knowledge 'function', although they may directly manage a small knowledge team, and hold budget responsibilities. See also Do You Need A CKO?

Classification. A key process in the knowledge sharing cycle. Documents are classified and indexed according to their core terms and concepts. Increasingly computer systems provide a level of automation of this process, using natural language or statistical methods. This topic is covered in some depth in our report: Taxonomies: A Framework for Corporate Knowledge?

CKO. See Chief Knowledge Officer.

CMS. See Content Management System.

Codification. See Knowledge Codification.

CoI. See Community of Interest.

Combination. One of four basic knowledge conversion processes described by Nonaka and Takeuchi. Combination is the bringing together of different sources of
explicit knowledge, and reconfiguring it into new explicit knowledge. Contrast this with Externalization, Internalization and Socialization.

Community. A community of interest or practice. The focus of a community is usually part of a website that typically provides message boards and other conversational facilities (such as discussion lists and instant messaging) as well as a library of online resources. Some people also refer to communities of purpose or communities of commitment.

Community of Interest (CoI). A group of people who share knowledge and experience around a common interest. Driven more by learning and less on outcomes than a Community of Practice.

Community of Practice (CoP). A group of people who share and develop their knowledge in pursuit of a common purpose or task, even though they do not necessarily work in the same department or organization. John Seely Brown of Xerox calls them "peers in the execution of real work". See the article: Knowledge Communities: Helping Them Thrive and the K-Guide: Creating Successful Communities.

Concept Mapping. A visual representation of core concepts showing the relationships between them. A typical concept map comprises a set of nodes or bubbles (the concepts) with arrowed links between them (the causal relationships). One of the several types of knowledge mapping.

Content Analysis. Analysis of a body of content (text) into its key concepts. As well as a method of discerning trends, this technique is used to generate keywords and thesaurus terms to improve subsequent text search and retrieval. The latter result is increasingly achieved through the use of automated classification systems.

CoP. See Community of Practice.

Content Management System (CMS). A computer system that makes it easier to develop enterprise portals and websites, by separating the management of content from its presentation (display). Blocks of content are tagged with metadata and other attributes and held in a content database. Web pages are generated (often 'on-the-fly') by accessing content from the database and inserting it into the relevant 'placeholders' on Web page templates. Since a single block of content may appear on many Web pages, the task of maintenance and updating is simplified. Compared to document management systems the focus of a CMS is individual content blocks. See also the article: Is Content King?

CRM. See Customer Relationship Management.

Customer Capital. A measure of the intangible value that accrues through customer relationships, including size of customer bases, knowledge of customers and their needs, and related intellectual property such as brands. A component of intellectual capital. See also Relationship Capital.
Customer Relationship Management (CRM). An approach that gathers and uses knowledge of customers’ buying habits and preferences in order to strengthen the ongoing relationship for mutual benefit. Customer knowledge comes out as the most important knowledge to manage in many KM surveys. See also the article Customer Knowledge is NOT Knowledge of the Customer and Customers: A New Twist on Knowledge Management.

Data Mining. A computer technique for extracting meaningful knowledge from masses of data. Using artificial intelligence methods it identifies unanticipated patterns by considering the interaction of many more variables than is achievable by humans. Contrast with text mining.

Decision Diary. A diary in which decisions are recorded, together with the assumptions and reasoning behind them. They are used to derive lessons and record knowledge that will help future decision-making.

Digital Rights. The rights and conditions of use for a piece of digital content. These rights may be part of the product's wrapper, or may be embedded in the product as part of a watermark to reduce illegal copying.

Discussion List. A mechanism used by to share information and knowledge using a single email address to communicate to all members of a given list. Typically all messages generated during one day are grouped together and sent as a single email in a 'digest'.

Desktop Conferencing. Videoconferencing using a desktop PC. A small camera (webcam) is usually mounted on top of the user's display screen. Evidence suggests that this often transfers expertise better than simply using email or documents.

Document Management System. A computer-based system for storing and retrieving documents held in a variety of formats, including scanned images of paper documents. Many provide version control and audit trails of changes and usage. The distinctions between document management, content management and records management systems are increasingly blurring.


EIP. See Enterprise Information Portal.

Enterprise Information Portal (EIP). Strictly, an entry point (home page) into an organization's intranet, although the term now often refers to the intranet itself and its content. Users have a personalized starting page that gives them a single point of access to enterprise information, wherever it is held. See also Portal and the articles Personal Portals: Still the Panacea? and Portals: Panacea or Pig?
**Expert System.** A common class of AI computer system that applies the logic and domain knowledge it has acquired from a human 'expert'. A typical expert system has three main parts - a knowledge base (that contains the rules), an inference engine (that interprets the situation against the rules) and a human interface.

**Explicit Knowledge.** Knowledge which is codified and articulated. It appears in the form of documents, procedures and in databases. Contrast with *Tacit Knowledge*.

**Externalization.** One of four basic knowledge conversion processes described by Nonaka and Takeuchi. It is the conversion of tacit to explicit knowledge, articulating thoughts through language or diagrams. Contrast with *Internalization*, *Combination* and *Socialization*.

**Expertise Directory.** A database of personnel and their skills that allows users to search for people with specific skills or relevant project experience. Often referred to as 'Yellow Pages'.

**Expertise Profiling.** The identification and classification of personal knowledge and skills. This may be done through manual completion of data forms or by computer systems that infer people expertise according to what they write in emails and documents. The output of the process may be an expertise directory or a database that is used in automated question and answer systems.

**Extensible Markup Language.** See *XML*.

**Extranet.** A portion of an organization's *intranet* that is opened up for external Internet access on a selective basis e.g. for customers to access specific areas following input of a password.

**Frequently Asked Questions (FAQs).** A list of questions that are most frequently asked or are anticipated by website or intranet users, together with their answers. Information providers use this technique to minimize the number of recurring queries and calls. Some organizations use the term AAQs - actually asked questions - since many writers of FAQs anticipate what might be asked or what questions their content answers.

**Fuzzy logic.** A technique used in *artificial intelligence* that works on a balance of probabilities for rules, rather than precise matching of data or patterns. Examples of its use are found in *text retrieval* and *case based reasoning* applications.

**Groupware.** Computer software tools that support collaborative working. Lotus Notes was the archetypal groupware software, but many groupware facilities are now provided on the Internet e.g. bulletin boards, discussion forums, instant messaging. The term is generally falling into disuse compared to 'collaboration software'. See also *Getting To Grips With Groupware*. 
Human Capital. The competencies, know-how, capabilities and experience possessed by individuals. One of the three main components of Intellectual Capital. The others are Structural Capital and Customer Capital.

Information Resources Management (IRM). The techniques of managing information as an organizational resources. They include the identification of information, its classification and ways of valuing and exploiting it. See the Insight: Information Resources Management (IRM).

IAM. Intellectual asset management or Intangible Assets Monitor.

IC. See Intellectual Capital.

IC Measurement. The measurement of the Intellectual Capital of an organization. Over the last few years there have been significant developments in IC measurement methods to help managers focus on knowledge and other intangible sources of wealth creation. See the Insight Measuring Intellectual Capital and the article Models For metrics.

IC Multiplier. The ratio of Structural Capital / Human Capital. It indicates how well an organization leverages its human capital through it structural capital. A higher ratio indicates good leverage and minimizes the loss of knowledge when people leave.

IC Reporting. The reporting of an organization's intellectual capital in a similar way that financial results are reported. Typically this is done as an annual IC supplement to the formal accounts. See also IC Measurement.

Implicit knowledge. Knowledge that is not explicitly identified but can be inferred from its context or packaging. An example is the knowledge held in software that can be deduced by reverse engineering. Contrast with explicit and tacit knowledge.

Information Audit. See Knowledge Audit.

Instant Messaging. An Internet or intranet facility in which users type messages into a window that is simultaneously viewed by other participants in that chat room or area. While commonly associated with informal social groups, the tool is a useful adjunct for synchronous knowledge exchange in a corporate context, for example as a way of interaction during a webinar.

Intangible Assets. Assets that are not physical or tangible in nature. They are therefore more difficult to identify and count as discrete entities. Knowledge is one type of intangible asset.

Intangible Assets Monitor (IAM). A method of IC Measurement developed by Karl Erik Sveiby for recording intangible assets. It divides intangible assets into three main
categories - competencies, external structure and internal structure. Indicators are divided into four distinctive groups - growth, renewal, efficiency and stability.

**Intellectual Capital (IC).** The intangible assets of a company not normally valued on the balance sheet. It is roughly - but not exactly - the difference between the market and book value of a company. It is often divided into the categories of *human capital*, *customer capital* and *structural capital*. Some schemes separate out *intellectual property*, while others use the broader term *relationship capital* instead of customer capital.

**Intellectual Property (IP).** *Intellectual capital* that is identifiable and protectable in law. It includes copyrights, patents, designs, trademarks etc.

**Internalization.** One of four basic knowledge conversion processes described by Nonaka and Takeuchi. Internalization is conversion of explicit to tacit, for example through applying explicit knowledge and learning from the experience. Contrast with *Externalization*, *Combination* and *Socialization*.

**Intranet.** An internal internet. In other words an internal computer network that runs the Internet protocol (TCP/IP). Most intranets have a computer 'gateway' to the wider (external) Internet and deploy a 'firewall' to prevent unauthorized access to a company's information. See the *Insight: Intranets - Sharing Organizational Knowledge*. See also *Portal* and *Extranet*.

**IRM.** See *Information Resources Management*.

**Just-in-time Knowledge.** The concept of delivering knowledge to an individual just at the time that they need it to carry out a task. This overcomes the problem of information overload, where knowledge not immediately needed may be forgotten or ignored. Mechanisms that help are alerting systems linked to computerized procedures or what a knowledge worker is typing into their computer and *natural language retrieval*.

**K-Log (Knowledge Log).** A *blog (weblog)* whose subject is knowledge.

**KM.** See *Knowledge Management*.

**KM Assessment.** An assessment of the quality and capabilities of knowledge management within an organization. A typical assessment tool will have a set of questions against which employees score the level of actual and desired capabilities. See for example the *Know-10 Assessment Tool*.

**KM Maturity.** The level of adoption of KM within an organization. This is gauged by reference to a KM maturity model that looks at stages of maturity from ad-hoc to fully embedded and integrated into the organization's core activities.
Know-bot (Knowledge robot). An intelligent agent that gathers or exchanges knowledge from other agents or computer systems.

Knowledge Analyst. A person or business that interprets the needs of a knowledge seeker and finds the most suitable sources. May also act as a knowledge broker.

Knowledge Archaeology. The process of rediscovering an organization's historical knowledge that has become lost.

Knowledge Asset. An identifiable piece of knowledge that has some intrinsic or extrinsic value.

Knowledge Audit. The systematic analysis of an organization's information and knowledge entities and their key attributes, such as ownership, usage and flows, mapped against user and organizational knowledge needs. The terms information audit, knowledge audit, knowledge inventory and knowledge mapping are often used synonymously.

Knowledge Base. A computer held database that record knowledge in an appropriate format for later extraction. It may take various forms depending on whether it supports an expert system or contains documents and textual information for human retrieval.

Knowledge Based System (KBS). A computer system that draws on AI techniques or knowledge bases for its operation. Examples include expert systems and neural networks.

Knowledge-based product. A product in which knowledge is a major component. Contrast with a knowledge product, which is wholly knowledge.

Knowledge Broker. An intermediary that connects knowledge seekers to knowledge providers. It may involve brokering a deal and retaining anonymity between buyer and seller until a suitable stage of negotiation. Some overlap with a knowledge analyst.

Knowledge Business. A business whose primary outputs are knowledge products and services.

Knowledge Café. Informal meeting area for the exchange of knowledge. Cafés can be virtual meeting rooms as well as real ones.

Knowledge Capital. The capital of an organization that is not physical or financial. Similar to intellectual capital, this is the term used by Paul Strassmann and Baruch Lev to describe the results of their methods that start with the capital reported in a company's balance sheet.

Knowledge Centre. A central function for managing knowledge resources. Often developed around a corporate library, a typical knowledge centre will manage both physical and virtual resources - documents, databases, intranet content, expertise
directories etc. See the article: Knowledge Centers - Aggregating Dispersed Knowledge.

**Knowledge Codification.** The process of articulating knowledge in a more structured way. It typically involves eliciting *tacit knowledge* from an expert, making it explicit and putting it into a template and format that aids dissemination and understanding. High levels of codification are found in computer software and mathematical formulae.

**Knowledge Commercialization.** The process of creating tradable goods and services from a body of knowledge. See the *Insight: K-Commerce - Profiting From Knowledge.*

**Knowledge Cycle.** A sequence of core knowledge processes that results in new knowledge. There are two main cycles - the innovation cycle and the knowledge sharing cycle.

**Knowledge Economy.** An economy in which knowledge is one of the main factors of production and constitutes the major component of economic output. This may occur directly through knowledge products and services or indirectly where knowledge is an added-value part of other products and services. Contrast with agricultural and industrial economies. See the *Insight: The Global Knowledge Economy.*

**Knowledge Elicitation.** The process of eliciting knowledge from a human expert in order to codify it into some form of *explicit* knowledge base or rule based computer system (*expert system*).

**Knowledge Inventory.** A list or database of knowledge entities - their sources, users and uses. It may be the output of a *knowledge audit.*

**Knowledge Leakage.** The loss of critical or damaging knowledge from an organization to the outside world (e.g. competitors, unauthorized personnel), either deliberately or unintentionally, when it should remain inside.

**Knowledge Management (KM).** The explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation in pursuit of organizational objectives.

**Knowledge Mapping.** The process of identifying core knowledge and the relationship between knowledge elements. A map may be portrayed in many visual formats, such as a hierarchical tree or a node and link diagram. It is typically a task carried out as part of a *knowledge audit.* See also *social network mapping.*

**Knowledge Market.** A marketplace for the buying and selling of knowledge. Online knowledge markets are sometimes referred to as knowledge e-marketplaces. They commonly allow the posting of knowledge needs and knowledge offers, and may conduct sales by auction. See the *Insight: Online Knowledge Markets.*

**Knowledge Narrative.** The articulation of value of an organization's products and services to customers and how knowledge resources are used to achieve this value. It
derives from the organization's vision and strategy and describes its KM ambitions. It often forms part of an IC report.

**Knowledge Networking.** The process of sharing and developing knowledge through human and computer networks. See the Insight: Knowledge Networking.

**Knowledge Object.** A piece of knowledge held in a well-defined and structured format, such that it is easy to replicate and disseminate. Although predominantly in the form of explicit knowledge, it may contain some element of human knowledge.

**Knowledge Practice.** A specific method or technique used to manage or process knowledge. Several methods may be used within a knowledge process. See the list of common practices.

**Knowledge Process.** A broad knowledge activity often performed at an aggregated level. Examples are knowledge gathering, sharing and dissemination. Knowledge moves from one process to another as part of a knowledge cycle.

**Knowledge Product.** A product which consists almost entirely of information or knowledge.

**Knowledge Recipe.** The transformation processes that uses existing knowledge assets as inputs and combines them in distinctive ways to create useful outputs and outcomes.

**Knowledge Refining.** The process of filtering, aggregating and summarizing knowledge drawn from a wide range of resources.

**Knowledge Repository.** A store of knowledge. While the term typically refers to explicit forms of knowledge, such as documents and databases, it can also refer to human-held knowledge.

**Knowledge Value Chain.** A sequence of knowledge processes including creation, organizing, dissemination and use that create value from knowledge stocks.

**Knowledge Worker.** An individual whose primary contribution is through the knowledge that they possess or process. This contrasts with workers whose work is predominantly manual or following highly specified procedures with little scope for individual thought.

**Knowledge Wrapper.** Information associated with a knowledge object that accurately describes the contents within. It holds metadata in a standard format and may hold encrypted digital rights information.

**Learning Network.** A network of individuals who share knowledge for the primary purpose of personal development and learning. A specific example of a Community of Interest.
Learning Organization. An organization which has in place systems, mechanisms and processes that are used to continually enhance its capabilities and those who work with it or for it, to achieve sustainable objectives - for themselves and the communities in which they participate. See the Insight: The Learning Organization.

Mapping. See Knowledge Mapping or Social Network Mapping.

Message Board. An area on a website where messages can be exchanged and viewed by a workgroup or community. Sometimes referred to as a bulletin board. The conversational interaction via the Web is sometimes called Web conferencing. See also discussion lists.

Metadata. Data about data. A structured piece of data that describes the contents of a database record. One common metadata format is that of the Dublin core (page XXX) that defines metadata fields for bibliographic databases. See also knowledge wrapper.

Meta-knowledge. Knowledge about knowledge. Knowledge inventories, knowledge maps and expertise directories are examples of meta-knowledge.

Mind Mapping. A visual method of organizing ideas. In most mind mapping systems the ideas branch out from a central point. In turn, each branch can have additional branches or links to other mind maps. A specific form of concept mapping.

Natural Language Processing (NLP). The ability of a computer application, such as a search engine to accept ordinary language input rather than highly specified instructions. It processes text through analysis of syntax and semantics.

Neural Networks. An artificial intelligence technique that mimics the operation of the human brain. It consists of a network of individual neurons that are triggered according to the intensity of various inputs and their relative 'weights'. It adjusts these weights according to the quality of the outcome for a given set of inputs. In other words, a neural network learns from experience.

Object-based Knowledge. Knowledge that is held in discrete entities (knowledge objects). Contrast with human-held knowledge (in people's heads).

Online Community. A community of interest or practice that uses computer-based collaboration facilities (such as message boards, discussion lists and chat, to share knowledge.

Ontology. An extension to a taxonomy that adds specifications of relationships between entities plus a set of automatic inference rules and associated actions. Typical relationships include "instance of" and "made of".
**Organizational Learning.** The processes by which an organization 'learns', so as to share *best practice* and avoid repeating mistakes. The learning may be embedded in individuals or in organizational systems and *organizational memory*. Closely related to the *learning organization* (an organization which has good organizational learning processes).

Organizational Memory. A place, such as a database or a document, where organizational knowledge is stored, and is readily accessible for reuse. Without a systematic storing of such knowledge, it is easily lost as people move around or leave the organization.

**Organizational Memory.** The core knowledge of an organization's past, including *project histories*, important decisions and their rationale, key documents and customer relationships. Recalling into organizational memory avoids 'reinventing the wheel' and repeating mistakes.

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**Precision (of search engine).** The proportion of documents retrieved in a search that are relevant to the searcher's intention as opposed to results that are irrelevant (or 'noise'). See also *Recall*.

**Project History.** The main activities and decisions taken during a project, recorded in a way that aids knowledge sharing and derives lessons for similar projects in the future.

**Portal.** The common term for Enterprise Information Portal. A portal is a single point of entry on the Web or an intranet to a wide range of information and knowledge resources and tools that enable a person to do their job more effectively. c.f. common definition of "gateway".

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**RDF.** See *Resource Description Framework*.

**Reach.** The extent to which knowledge is accessible in various locations. The Internet extends reach, as does the use of portable computers and mobile telephones. Contrast with *Richness*.

**Recall (of search engine).** The proportion of documents from the total that are available that are retrieved as the result of a search. Contrast with *Precision*.

**Richness.** The depth of knowledge, such as contextual knowledge, that enhances a piece of core knowledge. Multimedia also adds richness by giving the viewer more visual information and cues. Contrast with *Reach*.

**Richness. Resource Description Framework (RDF).** A framework developed by *W3C* for developing *metadata* standards for WWW resources. It brings together in one place metadata activities for resources such as site maps, content ratings, search
engine data collection and digital library collections. The resource descriptions use XML as the interchange language.

**Schema.** A taxonomy (classification) of knowledge or information. Common terms are used to describe an organization's knowledge domains which are categorized into hierarchies and related terms. See also Taxonomy and Thesaurus.

**Search Engine.** A piece of software or a service that indexes pages from the Web and lists those that match or closely match a user's search terms. Results are ranked by relevance or other factors and include items from sources all over the Web. One of the growing problems is the 'hidden' Web, content that is not indexed because it is generated on the fly or held in databases. It is estimated that over four fifths of Internet content is now hidden.

**Share Fair.** An event especially constructed to encourage the interchange of knowledge. Typically organized as a conference and exhibition with booths.

**Semantic Network.** A method of representing structured knowledge. It consists of nodes and links, where the nodes are concepts or entities and the links represent relationships and associations among the concepts. An ontology can be viewed as domain knowledge represented in the form of a semantic network.

**Semantic Web.** The addition of semantic constructs (ontological elements) to World Wide Web resources to create semantic networks accessible via the Internet. The Semantic Web is seen by some as the next evolution of the World Wide Web (the 'intelligent' Web).

**Socialization.** One of four basic knowledge conversion processes described by Nonaka and Takeuchi. Socialization is conversion of tacit knowledge to other tacit knowledge, typically by group processes where people learn together through a shared experience. Contrast with Externalization, Internalization and Combination.

**Stickiness.** A property of knowledge that is difficult to transfer, i.e. it is heavily dependent on personal knowledge and/or context. The term is also applied to a website that encourages visitors to spend significant time there and return repeatedly. Portal sites and search engines are very 'sticky'.

**Storytelling.** The use of stories in the organizational context, as a way of sharing knowledge and helping the process of learning.

**Structural Capital.** A measure of the intangible value of the firm embedded in its processes, systems and other non-human elements. A component of Intellectual Capital.
**Tacit knowledge.** Knowledge that is not codified but held in people's heads. Intuitive, experiential, judgmental and context sensitive, it may be difficult to articulate. Contrast with *explicit knowledge*.

**Tag.** Instruction for an application or formatting tool, such as an Internet browser. Tags are used in markup languages (HTML and XML). Tagging content is a key activity in implementing *Content Management Systems*.

**Taxonomy.** A system of classification. A typical taxonomy is a hierarchy of terms (nodes), where lower level terms are more specific instances of higher level ones. Taxonomies in which a term can appear in more than one branch are called 'poly-hierarchical'. Contrast with *Thesaurus* and *Ontology*.

**Thesaurus.** A controlled vocabulary of terms for a corpus of information. An extension of a *taxonomy* that includes rules on vocabulary usage for document classification e.g. "preferred terms", "synonym of", "belongs to", "used for" etc. See the article *Taxonomy-Enhanced Knowledge Publications*.

**Topic Map.** An ISO standard (ISO 13250) for describing relationships of nodes in an *ontology* independent of its underlying resources. Associations and Occurrences are key constructs in the XTM (XML Topic Map) standard.

**Text Mining.** Extracting the essential concepts and meaning from large amounts of textual information. See also text summarizing. Text summarizing. The result of text mining a single document and producing a summary which includes some of its key sentences. Typically, all the main concepts of a large document can be summarized in less than twenty per cent of its original size.

**Videoconferencing.** Communications over an electronic network using video. Systems range from desktop units on PCs (desktop conferencing) to dedicated systems that use cameras and monitors in a conference room setting.

**Virtual Organization.** An organization whose participants are geographically separated but who work together through online communications. Less commonly, the term refers to a temporary organization or network that is created for a specific purpose, but whose members remain independent.

**Weblog.** The full term for *Blog*.

**Webinar (Web seminar).** A presentation delivered over the Web using videoconferencing.

**Wiki.** A collaboration tool that allows multiple authors to create and update Web pages. *KMWiki* is an example of a Wiki devoted to KM. Contrast with a *blog* which is authored by an individual.
XML (eXtensible Markup Language). A Web-based markup language that allows a wide range of user-defined tags. If a community uses a common XML schema, then structured information can be shared between computer applications.


'Yellow Pages. A colloquial term for an expertise directory, since entries are organized by category rather than by name.
**Brainstorming**

Brainstorming is a group technique for generating new, useful ideas and promoting creative thinking.

It can be used to help 1) define what project or problem to work on, 2) to diagnose problems, 3) remediate a project by coming up with possible solutions and to identify possible resistance to proposed solutions.

**Roles**

There are three roles for participants in a brainstorming session: leader, scribe and team member.

**Leader**

This person needs to be a good listener.
Before the session, they need to refine a statement to help the others on the team focus on the reason for the brainstorming, and prepare the warm up activity.
During the session, the leader will need to relay the ground rules of the session, and to orchestrate the session.

The Problem Statement

- Needs to be specific enough to help participants focus on the intent of the session, but it must be open enough to allow innovative thinking.
- Should not be bias so it favors a particular solution or excludes creative ideas.

Ground Rules for Brainstorming

1. All ideas are welcome. There are no wrong answers. During brainstorming, no judgments should be made of ideas.
2. Be creative in contributions. Change involves risk taking, it's important to be open to new, original ideas. Every point of view is valuable.
3. Attempt to contribute a high quantity of ideas is a short amount of time.
4. Participants should "hitch hike" on others' ideas.

**Scribe**

This person needs to write down EVERY idea - clearly and where everyone in the group can see them. Check to be sure the materials provided will allow you to write so everyone in the group can clearly see what you are writing. The scribe could be the same person as the leader.

**Team Members**

The number of participants should be no less than five, and no more than ten. The ideal group number is usually between six and seven. Sometimes it is helpful to
include a person on the brainstorming team who has worked with the subject in the past.

Team members will follow this brainstorming procedure:

1. Team members will make contributions in turn.
2. Only one idea will be contributed each turn.
3. A member may decline to contribute during a particular round, but will be asked to contribute each round.
4. Participants should not provide explanations for ideas during brainstorming. Doing so would both slow the process down, and allow premature evaluation of ideas.

Set the Stage

- If possible the group should know what the brainstorming session is about before the session begins. This will allow them to think about the session.
- Provide appropriate places and ways to record ideas. This could include: flip charts, chalk or white boards, Post-Its, or large monitored computers.
- Provide a mental and physical environment which allows for creativity. Putting out thing such as magazines, clay, books, water colors, slates, a kaleidoscope, or jacks.

Steps for the Leader on How to Brainstorm

1. Introduce the Session.
   Review the reason for the brainstorming session, discuss the ground rules, and the team member procedure to be used.
2. Warm-Up.
   Provide a warm up activity (5 to 10 minutes) that helps the group get use to the excitement possible in a brainstorming session. This activity should be on a neutral subject that will encourage participants to be creative. The leader may want to end the warm up by having the members discuss what could be said about the ideas that would prevent brainstorming from being successful.
   This is the creative part! Set a time limit of 20 to 25 minutes. Sometimes it is effective to call time and then allow 5 more minutes. Stop when there is still excitement, do not force the group to work. Guide the group to generate as many ideas as possible. All suggestions made must be noted by the scribe. The scribe should use the speaker's own words. If the speaker's idea is long, the leader may need to summarize it and verify with the originator if the summary is correct.
   Review ideas for clarification, making sure everyone understands each item. Similar ideas should be combined and grouped. At this point you can eliminate duplicate ideas and remove ideas. Next the group should agree on the criteria for evaluation. This could include: time allotments, talents and skills of the group, and more.
5. Establish a consensus if appropriate.
   Have the group vote on ten ideas to consider, then have the group vote on five
of the ideas and tally the results to get a priority of feelings of the group. After refining ideas give each team member 100 points to allocate on the idea list. Team members can use their points however they wish. Have team members pick the five ideas they favor. Then ideas with the most picks can be prioritized.

**Ideas for Brainstorming**

Students want an original design for a web page. What will the general "theme" of it be -- not the detailed look but rather, the overall look.