

**USDA Forest Service
USDI Bureau of Land Management**

What is KM?



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Note: The USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) greatly appreciate the willingness of the Federal Aviation Administration (FAA) to share its KS documents. Reflecting the true spirit of sharing and collaboration, this gesture enables the FS and BLM to learn from and build on FAA's extensive research in this area.



Table of Contents

- 1.0 INTRODUCTION..... 1**
- 1.1 WHAT IS KM?..... 1
- 1.2 TACIT VERSUS EXPLICIT 1
- 1.3 A BRIEF HISTORY 1
- 1.4 WHY SHOULD WE BOTHER? 2
- 1.5 WHO SHOULD OWN KM? 3
- 1.6 HOW SHOULD WE COORDINATE KM? 3
- 1.7 WHAT SHOULD KM BE? 3
- 1.8 KM LESSONS LEARNED 4
- 2.0 MANAGING KNOWLEDGE ASSETS 4**
- 2.3 LEARNING BEFORE, DURING, AND AFTER 5
- 2.4 THE ACTIVITIES OF SHARING KNOWLEDGE 6
- 2.5 DISCUSSION ABOUT KNOWLEDGE 6
- 3.0 WHAT IS A KNOWLEDGE-BASED ORGANIZATION? 8**
- 4.0 CURRENT INITIATIVES 9**
- 4.1 THE FS KM WORKING GROUP 9
- 4.2 INTERAGENCY KM TEAM 10
- 4.3 FOREST ENCYCLOPEDIA NETWORK 10
- 4.4 THE FS KM INVENTORY 10
- 4.5 USDA ASK THE EXPERT 10
- 4.6 THE FS E-GOVERNMENT STRATEGY 10
- 4.7 THE BLM INTERNAL COMMUNICATIONS STRATEGY 11
- APPENDIX A – GLOSSARY 13**
- A-1 KNOWLEDGE SHARING TERMS 13
- A-2 OTHER TERMS 20
- A-3 ASTD GLOSSARY 22
- APPENDIX B – ACRONYMS 23**

Figures

- Figure 1.1 — Knowledge Spectrum 1
- Figure 1.2 — The Knowledge Life Cycle..... 4
- Figure 2.1 — The “P” Cycle of a Successful Business Idea..... 5
- Figure 2.3 — The Activities of Sharing Knowledge 6
- Figure 3.1 — Crossing the Knowledge Line 9

Tables

- Table 2-1 — See Our Stage 8



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1.0 Introduction

Knowledge management (KM) is a widely used term with many meanings. Some experts define the discipline as a way to systematically leverage information and expertise to improve organizational responsiveness, innovation, competency, and efficiency.

1.1 What is KM?

There are many definitions around, but the author prefers the following:

A fluid mix of experience, values, intelligence, insight, and inspiration that provides a framework for decision-making.¹

Another definition, which may be even more appropriate for the USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) KM initiative in the FS and BLM, is used in Learning to Fly:

"It's not about creating an encyclopædia that captures everything that anybody ever knew. Rather, it's about keeping track of those who know the recipe, and nurturing the culture and the technology that will get them talking."²

Lawrence Prusak of IBM talks about the continuum of knowledge, ranging from "capture" on one end to "connectivity" at the other (see Figure 1.1).



Figure 1.1 – Knowledge Spectrum

A focus on capturing knowledge connotes the creation of knowledge bases, information packages, and Web sites that constantly need attention.

An alternative approach is to invest time and energy in the processes and technologies that bring people together – creating COPs and networks that lead to collaboration between colleagues and the exchange of their tacit knowledge.

1.2 Tacit Versus Explicit

Tacit knowledge is:

Informal, experiential, knowledge that exists within employees' heads or organizational memory.³

Explicit knowledge is:

Formal, codified knowledge contained within documents, best practices, and databases.⁴

The way of thinking about capture and connectivity is to consider the relationship between "what do others know" and "what information do we have."⁵

1.3 A Brief History

After KM was introduced as a business idea in the early 1990's, the study of knowledge has split into three overlapping branches:

- Human capital (HC).



- Sociology.
- Information management (IM).

The study of HC was based on the economic value of what people know – their education, training, and work experiences. Another branch of study explored the role of knowledge in building organizational capabilities and institutions. A third branch looked at how knowledge enables innovation and becomes the core of decision-making and processes.

Other studies delved into the sociology of knowledge. They established early on that knowledge creation and use are social. Sociologists also spoke of social networks of knowledge producers and users, presaging the idea of communities of practice (COP).

In the area of IM, researchers spoke of the way information, and often knowledge, is enacted within organizations. This occurred early in the KM movement, and IM never made it as a separate branch of KM. Its practitioners' main contribution to the discipline was to redirect the focus of many thinkers to information, rather than technology, as a source of value.⁶ KM evolved to focus on knowledge based on human experience, rather than data and information, which are housed in computers.

1.4 Why Should We Bother?⁷

Deliver more with fewer resources. This is the productivity challenge that agencies are facing today due to the situation of budget cuts and reduction in personnel. A key to achieving this is by sharing know-how – by using and adapting what someone else (anywhere) has already learned. Many people know instinctively they should be doing it, but struggle to know how to get started.

There are a number of good reasons to why the FS and BLM are working together on a KM initiative:

- Both agencies are land management agencies
- They can achieve economies of scale by pursuing one initiative rather than two.
- They would be able to provide both the public and employees with a similar look-and-feel interface for all KM applications.
- The agencies can pool knowledge workers to develop a better program than either agency could do alone.
- They have a signed MOU between the two agencies to jointly pursue KM.



1.5 Who Should Own KM?

One important question in developing a KM program is: “Who should be responsible?” The following are possible answers, which differ from one organization to the next:⁸

- **Corporate strategy** – high-level buy-in is necessary.
- **Business operations** – KM should be tied to the “business” the USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) do.
- **Information resource management (IRM)** – KM relies on an effective information technology (IT) architecture.
- **Human resources (HR)** – knowledge is about people, skills, and expertise.
- **Learning and development** – they are not really different from KM.

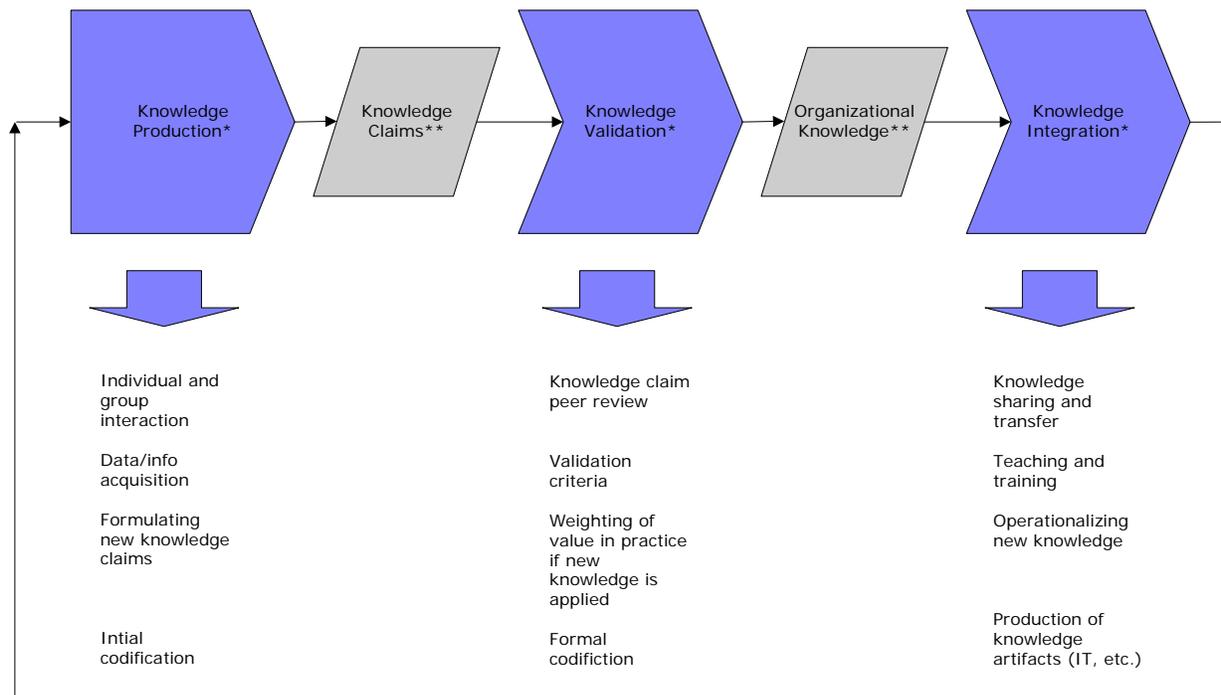
1.6 How Should We Coordinate KM?

What the IBM Knowledge and Organizational Performance Forum’s (KOPF) research [add endnote] found is that where KM resides depends on a number of factors:

- Stakeholders and sponsors.
- Lifecycle and maturity of the KM program.
- Organizational history and current strategic focus.
- Availability of skilled knowledge workers.

1.7 What Should KM Be?

- **Tied to the agency strategic plan** – KM should not be done for its own sake! It has to be tied to the agency’s strategy and based on a business case.
- **An organizational function** – KM should address the organizations’ areas with the most challenging and urgent problems.
- **Tied to the business strategy** (for metrics and buy-in purposes) – it should be sponsored by at least one executive.
- **Related to business operations** – KM should be tied to people’s work and the issues they face every day.
- **Partnered with IRM** – KM should deliver collaborative technologies, network infrastructure, and synchronous or asynchronous communications.
- **Linked to HR** – KM should focus on knowledge transfer and retention, skill-building, and expertise location.
- **Integrated with learning and development** – these have the same focus as KM, to develop an organization’s HC and assets. The integration should be done through AgLearn [and whatever system is used at the BLM].



* Knowledge processes
** Codified knowledge

Figure 1.2 The Knowledge Life Cycle⁹

1.8 KM Lessons Learned

Research conducted during the 1990s and early 2000s has shown that:¹⁰

- Knowledge is social.
- Knowledge is sticky, local, and contextual.
- Knowledge clumps in groups.
- The pervasive command and control organizational structure created in the 19th Century is the wrong one for managing knowledge.
- Trust is needed to share knowledge.

2.0 Managing Knowledge Assets

Knowledge assets are like a bank: people make deposits and withdrawals, and after time the value of the knowledge increases. In fact, knowledge is the only commodity that gains value when shared. To share knowledge, people need to agree on a vocabulary, a common set of terms that enable them to communicate.¹¹

Agencies cannot pre-engineer a knowledge solution. A solution takes a whole set of skills to get the "smartest" path between two points, which is not necessarily the shortest distance between the same two points.¹²

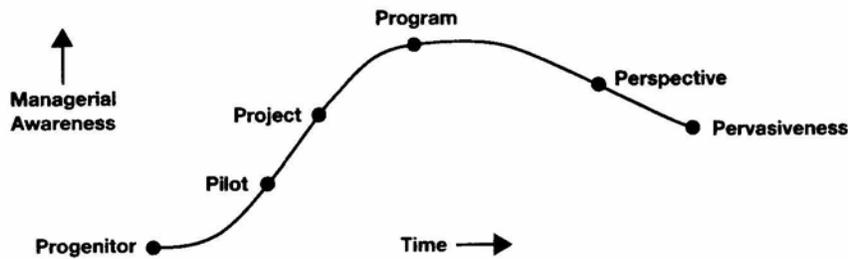


Figure 2.1 The “P” Cycle of a Successful Business Idea

Figure 2.1¹³ shows the “P” cycle, so called because all the steps start with that letter, shows the prior steps in the march of a business idea toward pervasiveness. The following is excerpted from *What’s the Big Idea*.¹⁴

- *Progenitors*: Both the people who bring the idea into the organization and the ideas that preceded a specific idea and supplied its various components and perspectives. When the individuals are ready to articulate and advocate for a particular idea, it has reached the progenitor stage.
- *Pilot*: The first application of the idea with an organization; usually a modest or small-scale implementation to prove that the idea can work within the organization. The intent is to learn some of the idiosyncrasies of the idea and its fit to the organization as the idea is put to work. At this point, the idea may have little budget, management support, or visibility with the organization.
- *Project*: The idea “comes out of the closet.” Funding, labor, attention, and other resources begin to flow toward the idea. When an idea reaches the project stage, senior managers would know about the idea, and it begins to appear in the internal communications of the organization.
- *Program*: A series of projects all based on the same idea. This is what happens when a project is successful. A program would generally involve many parts of the organization simultaneously and would go on for several years. It is at the program stage that the idea has its maximum visibility and awareness levels throughout the organization. It may be discussed in external communications.
- *Perspective*: When programs are successful, continue over a long period, and penetrate the mind of the organization. At this point, the idea begins to be part of everyday work life for a substantial number of individuals. People are still conscious of the idea when they practice it.
- *Pervasiveness*: The ideal end state for a business improvement notion. It is a perspective that has gone universal and unconscious. Awareness levels are not zero, but they are well down from the project and program levels. Awareness is no longer necessary when an idea affects everyone’s behavior.

2.3 Learning Before, During, and After¹⁵

2.3.1 **Learning from Your Peers.** There is no reason to start a job all over again. Staff should have access to the resources that will allow them to apply “lessons learned” from the experience of others who have done similar tasks.

2.3.2 **Learning While Doing.** A technique learned from the US Army is called After Action Review (AAR)¹⁶. Quickly learning from the last event allows managers

and staff to apply these lessons to the next event. It only takes about 15 minutes, and the benefits derived can be large.

- 2.3.3 **Learning After Doing.** At project completion, sit down with all the people with a stake in the result and review what went well and what could have been done differently. Consider who can benefit from what has been learned. Identify customers for this new knowledge. Don't assign blame; focus on what could have been done better. Get input from the project customers.

2.4 The Activities of Sharing Knowledge

Not all knowledge is worth preserving, nor is all knowledge worth sharing. There are several activities involved, as described in figure 2.3 below.

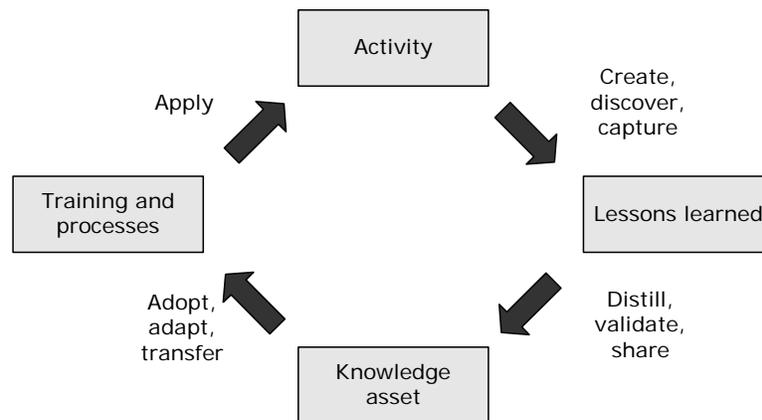


Figure 2.3 — The Activities of Sharing Knowledge¹⁷

2.5 Discussion About Knowledge

People tend to share knowledge with those they trust.¹⁸ People often interchange the terms “know-how” and “knowledge,” but there is a danger that in doing so they miss some other important attributes of what could be considered “knowledge.”¹⁹

- 2.5.1 *Know-how* is the processes, procedures, techniques, and tools a person uses to get something done.
- 2.5.2 *Know-why* relates to strategic insight. Know-why is understanding the context of the individual's role, and the value of her/his actions. It's the “big picture” view of things. Know-why is a key to lifting morale and generating commitment from staff.
- 2.5.3 *Know-what* is the list of activities required to complete a task. It's the information needed in order to make a decision and it's the information an employee needs to collect before accomplishing a task.
- 2.5.4 *Know-who* includes knowledge about relationships, contacts, networks, who to call on for help. It's the “I know a person who can” factor. People apply and build up this type of knowledge on a day-to-day basis, often subconsciously.
- 2.5.5 *Know-where* is that uncanny ability that some people have for finding the right information. An employee probably knows people in her or his office who fulfill this role, functioning like human search engines. If one visits Yahoo!, or one of the other major Internet portals, one will be in the knowledge-rich



environment where most of the content is know-where – links to where relevant know-how can be found on the Internet.

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

“A focus on capture drives a set of activities relating to codification of knowledge. Organizations such as the US Army serve as a good example of this approach, investing large efforts in creating and distributing explicit knowledge..., all with tremendous efficiency.

“An alternative approach is to invest more time and energy in the processes and technologies which stimulate connections between and among people. This could involve the creation of communities and networks, peer interactions, workshops, collaboration tools, and knowledge directories. These connections and conversations in turn address the transfer of tacit knowledge. This is the knowledge locked up in the heads of individuals that tends not ever to be written down, but flows between staff sharing war stories, or when a member of the staff is mentored by another.

“These two extremes illustrate the range of options available. Neither one is right or wrong; the selection of a point in the spectrum should simply be a reflection of the culture in an organization at a point in time. Some point on that spectrum represents the best return on your knowledge management system.”²⁰

Table 2-1²¹ shows where an organization is and what it takes to introduce KM into the organization.

Stage	Attributes	Critical enabler for future growth
Zero – Beginner	No organized efforts are in place to capture, protect, and share knowledge within the organization.	Leadership commitment to protecting intellectual capital and getting educated in the KM discipline.
One – Knowledge Laggard	Little or no investment in developing and fostering collaboration. Customers do not perceive the organization as adding value to customer relationships through applying knowledge.	Dedicating full time resources to KM activities.
Two – Knowledge Loser	The value of knowledge assets is recognized, but no processes are in place to protect intellectual capital. Significant loss of individual and organizational knowledge occurs as employees retire or move on to other organizations.	Targeted initiatives that leverage technology investments in specific areas of the business.
Three – Knowledge Gatherer	Early stage of KM. Efforts are focused on collecting explicit knowledge such as document repositories. Primary emphasis is on information technology investments.	Measuring tangible outcomes for KM initiatives that impact customers, operational efficiency, and financial results.



Four – Knowledge Leverager	KM is well understood by most employees in the organization . Strategies focus on leveraging intellectual capital to increase value to the organization.	Stabilized and repeatable processes and systems support collaboration and knowledge creation activities between internal knowledge workers.
Five – Knowledge Innovator	Effective KM is central to the organization's mission . Strategies focus on collaboration and connecting people to stimulate innovation.	Transforming the culture of the organization.
Six – Learning Organization	The KM discipline is pervasive throughout the organization in structures, systems, and employee behavior . The culture supports a continuous cycle of learning that allows the organization to adapt to changing market conditions and capitalize on new opportunities quickly.	Expanding KM activities to multiple business partners through common development platforms as standard business rules.
Seven – Knowledge Enterprise	Knowledge systems extend beyond the enterprise to business partners and customer operations . Knowledge strategies focus on creating new business models through alliances that leverage intellectual capital and competencies across an entire value chain.	

Table 2-1 See Our Stage

3.0 What is a Knowledge-Based Organization?

Each organization is influenced by outside forces. Some call our era the knowledge economy. It comes on the heels of the change from the agriculture society, through the industrial revolution, into the current “third wave.” Since, as service organizations, the two agencies don’t produce “widgets,” everyone in the FS and BLM is a knowledge worker who is valued for her or his intellectual contributions to the two agencies.

In his publication *What (and Where) is the 21st Century Organization?*²² Laurence Prusak discusses the characteristics that define the knowledge organization.

- Transparency and speed of communications about which employees have knowledge that others may need and how well the knowledge owners share their knowledge.
- Norms and cultures that encourage sharing.
- A close alignment of knowledge with rewards.
- Speed of knowledge transfer (including tacit knowledge) especially when employees are co-located.
- Loose structures that allow for ad-hoc team formation.
- Recognition of the role of emotions in work.

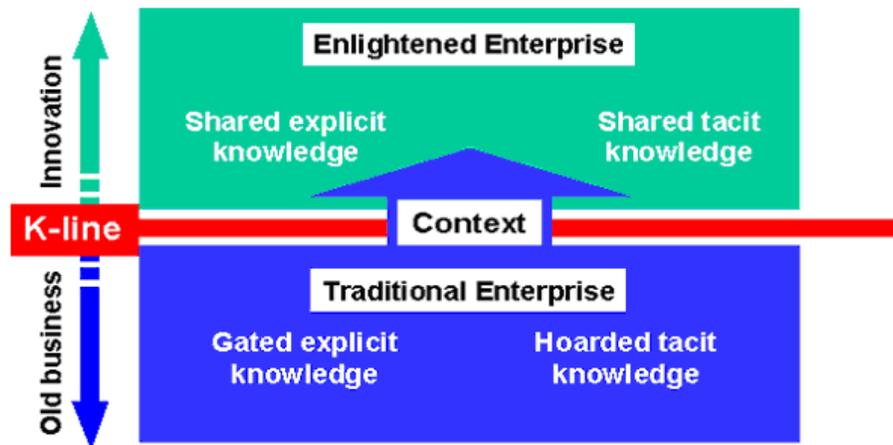


Figure 3.1 Crossing the Knowledge Line²³

Figure 3.1 shows how to change the FS and BLM from traditional organizations into an enlightened enterprise with the introduction of a knowledge sharing program.

In his book, *The Fifth Discipline*,²⁴ Peter Senge states that leaders must provide strong support if an organization is to become knowledge-based and undergo cultural change.

Management has to make sure relevant processes and procedures are in place, e.g., rewarding employees for sharing knowledge. Staff needs the time to contribute to an organization's knowledge base and to take advantage of tools that foster a collaborative environment. Managers need to promote the use of KM technologies; staff will not use a technology just because it is there.

Cultural issues are also important. Sharing and collaboration require an atmosphere of trust and knowing staff can safely ask questions without looking stupid.

Trust plays a key role in organizational success. People share what they know with people they trust. Trust among management and staff produces better project outcomes in terms of quality, time, and budget. Trust brings better decision making and enables employees to feel more confident in their work, even prompting them to volunteer for new tasks because they feel trusted to do a good job.

Research by KOPF, *Trust and knowledge sharing: A critical combination*,²⁵ shows the factors that foster trust in an organization. Two types of trust relevant to this discussion:

- **Benevolence-based trust** – "I trust you will not harm me when given the opportunity."
- **Competence-based trust** – "I trust you know what you are talking about."

To receive useful knowledge, people need to trust that the knowledge source is benevolent and competent; competence is especially key when the knowledge is difficult to verify.

4.0 Current Initiatives

4.1 The FS KM Working Group

The KMWG, chartered in 2003, has a group coordinator and several subcommittees:

- Capturing employee knowledge.
- Applying KM tools to FS activities and issues.
- FS KM strategy.



- FS enterprise architecture.
- Communications.

4.2 Interagency KM Team

The Memorandum of Understanding between the FS and BLM, signed in July 2003, created the IKM team. Under Service First,²⁶ the two agencies are committed to sharing access to their knowledge assets. The MOU further declares that the two agencies will collaborate, through the team, to demonstrate the value and promise of KM.

4.3 Forest Encyclopedia Network²⁷

The Forest Encyclopedia Network is a joint project of the FS, Southern Research Station, and Southern Region Extension Forestry. This project provides natural resource professionals and the general public better access to an integrated body of knowledge needed to tie together the best scientific knowledge, management practices, and tools for problem solving.

4.4 The FS KM Inventory

The FS KMWG “has initiated an inventory of KM practices, systems, and tools currently used in the agency. Such practices, systems, and tools might include (but not be limited to): communities of practice, data mining tools, data sharing systems, content management, systems that combine data and produce new information, collaboration tools, tools applied to training and learning, and tools that capture and store data information for easy retrieval. An inventory is important to the FS because the overall purpose of the KMWG is to provide strategic planning, guidance, coordination, prioritization, communication and education regarding KM activities and initiatives throughout the Forest Service.”²⁸

4.5 USDA Ask the Expert

As part of the new USDA portal²⁹, this tool allows users to direct specific questions to USDA subject matter experts (SME). Using a combination of automated and manual processing to send and track responses to the customer, the tool automatically routes questions to the appropriate SME, based on the subject area of the question. It will also provide some automated capabilities to help streamline and standardize the process of interacting with customers.

4.6 The FS e-Government Strategy

This strategy, dated February 11, 2002, is comprised of several sections. KM is sprinkled throughout the document. Below are some of its key parts.

4.6.1 FS e-Government Strategy National Leadership Team

This document, dated December 6, 2001, visualizes e-Gov as a “force multiplier” for FS resources. Gain [benefit] is achieved by deploying KM, collaborative technologies, and process reengineering. Initiatives include:

- COPs as part of National Environmental Policy Act (NEPA) and National Forest Management Act (NFMA) planning and public involvement.
- Virtual expert network as part of internal efficiencies.



4.6.2 FS e-Government Strategy and Roadmap

This document, dated January 15, 2001 includes the following areas of pressing need:

- Requirement for increased collaboration.
- FS skills gap – education and learning will improve the skills of FS employees and the public's knowledge of environmental issues.

4.6.3 FS Initiatives

The roadmap also identifies the following initiatives, among others:

- NEPA/NFMA planning and public involvement – interest forums.
- Internal efficiencies – virtual expert network.
- Education and learning – digital and distance-learning campus.
- Enterprise Architecture [get input from IRM].

4.6.4 FS Interview Summary: Challenges and Opportunities

This document, dated November 8, 2001, lists KM as a foundation for various initiatives:

- There is a need to evolve into a "Learning Organization" that shares knowledge and successes.
- All facets of KM can be applied to the FS.
- KM and learning can be both priorities and solutions to areas of organizational pain.

4.7 The BLM Internal Communications Strategy

KM is prominent throughout this draft document dated June 2004. As stated in this document, KM "is a continuous value-added process of creating, capturing, organizing, sharing, and renewing the knowledge base of the BLM, including its employees, records, and other information resources." The document also reaffirms the vital role of KM as a component of the BLM Internal Communication Strategy, which will provide a way to capture good practices, employees' knowledge and expertise and make that knowledge readily available. Employees will have the incentives to share what they know.

To carry out this vision, the BLM created a KM Subgroup headed by the assistant director for human resources. Among strategic actions defined is the need to collapse separate state and programmatic intranets into single coordinated BLM intranet using a portal technology.

KM is a vital component of implementing the BLM Internal Communications Strategy. Of 27 identified tasks, KM is leading 14 of them.

The document identified the following expected outcomes in the KM area

- There will be a linkage among the Strategic Plan, performance plans, and priorities to employee's day-to-day work
- KM will help the BLM update and maintain consistent and adequate guidance.
- BLM's Internal Communications system will provide improved processes and tools to capture good practices, employees' knowledge and expertise, and make that information available throughout the BLM.



What is KM?

- The BLM will have incentives for sharing knowledge, expertise and fostering professional pride.
- Use of KM will allow the organization to capture knowledge and expertise to define and apply best practices to improve the way the two agencies do business.



Appendix A – Glossary

A-1 Knowledge Sharing Terms

Adopter – One who becomes a user of new knowledge or an innovation and goes on using the knowledge.

Affinity – Discovered relationship between a person and a topic, or taxonomy category area.

Asynchronous – Description of objects or events not coordinated in time. In a discussion database, it pertains to a comment can be posted independently of other comments.

Balanced Score Card –Set of financial and non-financial measurements that indicate the operational effectiveness of an organization.

Benchmarking –

1. The process of using a product or service as a standardized reference point against which similar products or services are measured.
2. Use of an industry or government standard.

Best Practice – Process or experience that an organization has found to be superior to others.

See also [Good Practice](#).

Blog – Small, regularly updated on-line journal, usually kept by an individual, in which the writer comments on any range of topics and provides links to related resources. These journals enable individuals and organizations to share information with their customers, partners, and employees.

Boundary Spanner – Employee who crosses an organization's function, hierarchy, location, or structure to share knowledge with others.

Change Agent – Person who influences others to effect change in an organization.

Chat – Instant, synchronous exchange of knowledge.

Clumping – Organizing knowledge, information, or data around decision points to promote efficient and effective decision-making.

Clustering – Categorizing data, information, or knowledge by similarities when bringing related information together to help users to find it.

Collaboration – Working together with others in some work-related undertaking.

Collaborative Tools – Tools that enable sharing of knowledge across time and distance. These tools may enable both structured and free-flow sharing of knowledge and good practices. Transcripts of the use of these tools may be incorporated into a knowledge base for future use.

Communications Channel – Pathways people use to send and receive communications. They can be formal, informal, technological, human, individual, and organizational, and are frequently connected through networks.

Community – Voluntary group of people mutually engaged in actions and have a shared sense of identity.



See also [Network](#).

Community of Interest – A group of people with a common interest, which does not necessarily relate to their day-to-day work.

Community of Practice – A group of people who share common work practices and who do not, however, constitute a formal work team. Communities of practice generally cut across organizational boundaries and help create and share knowledge.

Competition – Rivalry in business as for customers or markets.

Content – The data, information, and knowledge (including processes and procedures), which are important to the organization.

Content Management – Enterprise-wide system that provides meaningful and timely information to users by identifying, collecting, categorizing, and refreshing content using a common taxonomy.

Content Steward – Person responsible for improving the management of an organization's knowledge assets, driving new processes and promoting behaviors for creating higher quality information and sharing knowledge.

Context – The relevant environment surrounding information or knowledge that enables people to interpret and explain that information or knowledge.

Cooperation – Working together with others for a common purpose.

Core Competencies – The complex set of skills, knowledge, and resources that span the organization, yield a sustainable competitive advantage in the marketplace, and permeate the organization's culture. Core competencies evolve over time and are based on specific "know-how."

Corporate Knowledge – The collective body of experience and understanding of an organization's processes for managing both planned and unplanned situations.

Corporate Yellow Pages - A listing of individuals, their expertise, and contact information.

Crawler – Internet- or intranet-based query through documents to derive meaning, value, and relationships among people and content. Usually displays query results within a portal.

See also [Knowledge Portal](#).

Customer Capital – The value of an organization's relationships with the people with whom it does business, or the value of its [the company's] franchise, its ongoing relationships with the people or organizations to which it sells.

Cybrarian – A librarian for electronic, including multimedia, materials.

Data – Facts suitable for communication, interpretation, or processing by people or technology.

Data Mining – Use of automated data analysis techniques to uncover previously undetected relationships among data items. Data mining often involves the analysis of data stored in a data warehouse.

Data Warehouse – Centralized database that captures information from various parts of an organization's business processes, which can later be analyzed to determine predictive relationships through the use of data mining techniques.

What is KM?



Database – Collection of information organized into interrelated tables of data and specifications of data objects.

Decision Support System (DSS) – Software application that analyzes business data and presents it so that users can make business decisions more easily.

Digital Bread Crumbs – Pockets of knowledge and expertise that exist in an organization or with an individual.

Discontinuity of Knowledge – A phenomenon that occurs when experienced knowledge workers move from one position to another position (inside or outside an organization) without having adequate time or KM facilities to transfer their tacit knowledge to coworkers.

Discussion Database – On-line, threaded series of questions, answers, and comments posted by participants.

Document Management – Electronic storage, retrieval, tracking, and administration of documents within an organization.

Early Adopters – In the change management life cycle, the first small group to try out a new concept or product.

Electronic Collaboration – People working together toward a specific goal through sharing and accessing knowledge from a Web browser, discussion forum, chat room, e-Mail, calendar, bookmark, address book, file, or presentation.

Enterprise IQ – Sum total of the organization's knowledge, including business and internal intelligence.

Epistemology – The study of the nature and foundations of knowledge.

Expertise Locator – Technology that crawls through a large knowledge base to locate expertise in documents and their authors and create profiles.

Explicit Knowledge – Formal, codified knowledge contained within documents, best practices, and databases.

Framing – Creation of a contextual environment for a question, problem, or situation, as the basis for human communications and understanding essential for knowledge transfer.

Gate Keeper – Person who controls the flow of information coming into a group.

Good Practice – Any practice or experience effective in improving performance against predetermined measures.

Ground Truth – Complex reality of authentic experience, as opposed to generalities, theoretical models, and official pronouncements.

Heuristic – A rule of thumb that involves or serves as an aid to learning, discovery, or problem solving by experimental and especially trial-and-error methods. Of or relating to exploratory problem-solving techniques that utilize self-educating techniques (as the evaluation of feedback) to improve performance.

Human Capital – All the expertise, experience, capability, capacity, creativity, or adaptability possessed by the employees in an organization. It is heavily influenced by their tacit knowledge.



Implicit Knowledge – See [Explicit Knowledge](#). [Link does not work]

Information – Data that is categorized, calculated, condensed, organized, or grouped with increased meaning.

Instant Messaging – Synchronous exchange of messages, including audio and video.

Intellectual Capital – Intangible intellectual assets of an organization, including human, social, and corporate capital.

See also [Knowledge](#).

Just-in-Time Knowledge –

1. Based on the premise that knowledge is too dynamic to be dumped and stored in bulk, this method ensures that stored knowledge is usable and relevant to users. Tools used include expertise location, subject flagging, social insect models, oral histories, and knowledge exchanges.

2. Knowledge that is available to a user at the particular time they need to make a decision or act on a situation.

Just-in-Time Learning – Structured learning that takes place without the need for the physical presence of an instructor. It uses various media, e.g., CD-ROMs, videotapes, correspondence courses, and the Internet.

Knowledge – Fluid mix of experience, values, intelligence, insight, and inspiration that provides a framework for decision-making.

Knowledge-Based Economy – Economy based on ideas, innovation, and intellectual property.

Knowledge-Based Organization – An organization whose functions revolve around knowledge of workers and knowledge embedded in artifacts and processes. Such an organization promotes the creating, sharing, and applying of knowledge among its workers and with its customers and suppliers to achieve a specific goal, e.g., to fulfill a mission or address stakeholder needs.

Knowledge Artifact – Variety of forms that embody knowledge, including documents, conversations, pictures, thoughts, software, e-Mail messages, data sets, winks and nods, and whatever else is used to represent meaning.

Knowledge Audit – Tool by which to understand an organization's current and future knowledge needs and gaps.

Knowledge Base – Stored knowledge of employees of an organization that can be accessed by others.

Knowledge Broker – Someone or something that brings together seekers and sources of knowledge.

Knowledge Centric Organization – Organization that identifies its critical knowledge needs and builds methods and processes to fulfill those needs.

Knowledge Codification – Process of converting knowledge into accessible and effective formats.

Knowledge Creation – Activities associated with the entry of new knowledge into a system, including knowledge development, discovery, and capture.

What is KM?



Knowledge Discovery – A nontrivial process that gleans new, understandable, interesting, and potentially useful information from stored data. Knowledge discovery is a means of extending limited human capabilities by using computer capabilities to analyze large, often complex datasets in order to understand more information than could have been previously extracted using conventional means.

Knowledge Ecology –

1. Interdisciplinary field of management focused on the relational, social, and behavioral aspects of knowledge creation and use.
2. Field that focuses on discovering better social and technical conditions for knowledge creation and use.

Knowledge Economy, The –

1. System of creating wealth through the efforts of knowledge workers (in contrast to one based on manufacturing or agriculture).
2. An economy where the primary means of wealth creation is based upon the effective use of intangible assets, such as brand, intellectual property, and research and development.

Knowledge Flow – Set of processes, events, and activities through which data, information, knowledge, and meta knowledge is transformed from one state to another.

Knowledge Gap – Difference between what employees know and what an organization needs to know to carry out its mission.

Knowledge Half-Life – The point at which the acquisition of new knowledge is more cost-effective and offers greater returns than the maintenance of existing knowledge.

Knowledge Identification – Process of analyzing and describing an organization's existing knowledge environment.

Knowledge Intermediary – Person who helps connects individuals in an organization to either explicit or tacit knowledge (overarching description that encompasses Knowledge Broker, Knowledge Researcher, and Knowledge Steward).

Knowledge Management –

1. Discipline that seeks to improve the performance of individuals and organizations by maintaining and leveraging present and future value of knowledge assets, encompassing both human and automated activities.
2. Process an organization uses to optimize its intellectual capital to achieve organizational objectives

Knowledge Management and Information Technology Glossary – See <http://www.dau.mil/pubs/misc/know-it.asp>

Knowledge Management Glossary – See http://www.nelh.nhs.uk/knowledge_management/glossary/glossary.asp

Knowledge Map – System that displays and maintains relevant content categories and their appropriate relationships that can easily be searched or browsed by users.

Knowledge Mapping – A process that provides a "picture" of the knowledge an organization needs to support business processes.



Knowledge Maven – Subject matter expert.

Knowledge Portal – Fully searchable Internet- or intranet-based access to multiple applications, knowledge bases, and information sources (including an expertise locator) through a single user interface.

Knowledge Repository – Searchable database of artifacts.

Knowledge Researcher – Individual who is responsible for searching, retrieving and delivering knowledge that is in explicit or codified form.

Knowledge Retention – Activities that preserve knowledge and allow it to remain in a system once introduced, including activities that maintain the viability of the knowledge.

Knowledge Sharing – The exchange of ideas and experiences between two or more individuals.

Knowledge Steward –

1. Individual whose responsibility is to convert tacit knowledge to explicit knowledge that can be more easily codified.
2. Person who interviews a project team and then captures and summarizes the learning from that session.

Knowledge Transfer – Activities associated with the flow of knowledge from one party to another, including communications, translation, conversion, filtering, and rendering.

Knowledge Use – Activities and events connected with the application of knowledge to business processes.

Knowledge Worker – Employee whose key assets and contributions to the organization are derived from her or his knowledge.

Learning – Acquisition of knowledge or skill.

Learning Organization – Organization that recognizes learning as a renewable resource and worthy of continual investment.

Lessons Learned – Good work practice or innovative approach that is captured and shared to promote repeat applications or an adverse work practice or experience that is captured and shared to avoid a recurrence.

Lurker – Person who stays hidden but desires access to a community of practice space without contributing to its knowledge base.

Meta Knowledge – Knowledge about knowledge, about where it is located, or who possesses it.

Metadata – Data about the data itself, including its origin, size, formatting, or other characteristics, which is essential to understanding the contents of a data warehouse.

Network – Connected group of individuals who use their connections to gain access to power, information, knowledge, and to other networks.

See also [Community](#).

Ontology – Structured inventory of concepts, their definitions, and their relationships, serving to structure and define knowledge acquisition.

What is KM?



Organizational Story – Detailed narrative of past management actions, employee interactions, or other intra-organizational events that are communicated informally with the organization.

See also [Storytelling](#).

Portal – Web site that provides an entry point to multiple, related sites.

Proven Practice – See [Good Practice](#).

Representative – Person who facilitates the flow of information leaving a group.

Semantic Web – A Web where information can be “understood” by machines as well as humans.

Social Capital –

1. Norms and social relations embedded in social structures that enable people to coordinate action to achieve desired goals.
2. Stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind members of communities and make cooperative action possible.

Social Network – Relationships based on shared knowledge requirements, the willingness to solve problems together, and an atmosphere of emotional safety.

Special Interest Group – Group of people interested in a subset of a knowledge area covered by a community of practice or a community of interest.

Spider – See [Crawler](#).

Storytelling – Ancient and innate behavior that facilitates knowledge development and transfer by developing a relationship through a shared experience.

See also [Organizational Story](#).

Stovepipe – Type of organization that limits the flow of data, information, and knowledge to within its boundaries, without sharing it with other organizations.

Tacit Knowledge – Informal, experiential, knowledge that exists within employees' heads or organizational memory.

Taxonomy – Structured set of names and descriptions used to organize documents, enabling retrieval and sharing of data, information, and knowledge.

Threaded Discussion – Asynchronous group discussion through individual postings for view on the Web by members of a group. Participants can come into the discussion at will, see all postings, and respond to any or all of them.

Training – Formal instructions to make people proficient or qualified.

Trust – Firm belief or confidence in the honesty, integrity, reliability and justice of a person or a group.

Virtual – Indicated simulation technology that enables the user to cross boundaries and experience something without needing its physical presence, as virtual theme parks, virtual communities.

Virtual Collaboration – Two or more people working together in real-time over a network or the Internet using shared screens, shared whiteboards, or video conferencing.



Virtual Organization – Group of people who only meet online for common purpose or endeavor.

Virtual Team – Three or more dispersed people working on the same common goal using information technology. The goal or project may be a product or service. The technology may range from simple e-mail to advanced digitized design. The team electronically shares the same information, concurrently when necessary. The team works effectively together trusting other members that they may never meet. The short definition is moving work to people.

Water Cooler Effect – Informal method for sharing knowledge, generally referring to random interactions among people.

Web Conferencing – See [Threaded Discussion](#).

Web Log – See [Blog](#).

Whiteboarding – Synchronous sharing of an application.

Wisdom – Ability to use knowledge with discretion.

A-2 Other Terms

Accountability – The means of regularly facing the truth about the gap between an individual's, team's, or agency's intention and their actual behavior.

Activity – A process, function or task that occurs over time and has recognizable results. Activities combine to form business processes.

Analysis – A process of manipulation and accessing data to turn data into knowledge.

Backbone - The part of a network that connects other networks together.

Baseline – The current condition that exists in a situation. It is usually used to differentiate between a current and a future representation.

Enterprise Directory – A single location for applications and users to quickly find information dramatically increased information sharing (locating), reduced cost in application development, and database and/or directory administration.

Enterprise-wide – An action, activity, program, or effort such as a technology that is applicable across an entire organization.

Entity – The representation of a set of real or abstract things (people, objects, places, events, ideas, combination of things, etc.) that are recognized as the same type because they share the same characteristics and can participate in the same relationships.

Executive Information Systems (EIS) – A computerized system intended to provide current and appropriate information to support executive decision making for managers using a networked workstation. The emphasis is on graphical displays and an easy to use interface that present information from the corporate database. They are tools to provide canned reports or briefing books to top-level executives. They offer strong reporting and drill-down capabilities. These tools must provide information in context to convert

What is KM?



information to knowledge.

Governance – The act, process, or exercise of authority and control including the persons who make up a governing body to administer such actions.

Information Architecture – The art and science of organizing information to help people effectively fulfill their information needs. Information architecture involves investigation, analysis, design and implementation.

Infostructure – The intellectual content, facilities, information services, and technical systems provided in support of learning, teaching, research, and administration by information resources and information technology.

Internet – Worldwide network of computer networks that use network protocols to facilitate data transmission and exchange.

Intranet – Organizational network of computer networks that use network protocols, accessible only by the organization's staff and authorized contractors. An intranet's Web sites look and act just like any other Web sites, but the firewall surrounding an intranet fends off unauthorized access. Like the Internet itself, intranets are used to share information and afford secure access to the organization's resources.

Legacy Systems – Existing information systems and/or databases that may or may not be migrated to a new system that uses newer technology for more efficient and effective delivery.

Network-centric – Refers to the use of networked technology to deliver information and data electronically.

Performance Measure – An indicator that can be used to evaluate quality, cost, or cycle time characteristics of an activity or process usually against a target or standard value.

Process – A systematic series of actions directed to some end.

Pull – An action by the end user to bring data, information, or a Web page into her or his electronic environment.

Push – In client/server applications, "pushing" is sending data to a client without the client requesting it. The World Wide Web is based on a pull technology where the client browser must request a web page before it is sent. Broadcast media, on the other hand, are push technologies because they send information out regardless of whether anyone is tuned in.

Repository – A mechanism for storing any information that has to do with the definition of a system at any point in its life cycle. Repository services would typically be provided for extensibility, recovery, integrity, naming standards and a wide variety of other management functions.

Resource – An object in competition with another like object. A resource is a scarce object.

Search Engine – Software that helps a person find a piece of information. A public search engine such as Google (<http://www.google.com>) uses programs that visit each web site on the Internet and copy each page into a database on its server. A user then asks the



program to look through the database for a word the user enters. The programs that visit each site are called spiders or robots, and visiting each site is called crawling.

Team – A number of persons associated in the performance of a task.

Verification – The process of consulting a trusted ally to ensure the reasonableness or soundness of a decision (grounding a decision using implicit knowledge).

Web Browser – A software application used to locate and display Web pages. The two most popular browsers are Netscape Navigator and Microsoft Internet Explorer. Both of these are graphical browsers that can display graphics as well as text. In addition, most modern browsers can present multimedia information, including sound and video, though they require plug-ins for some formats.

Web-Enabled – The use of technology to run efficient programs and services, including an intranet, over the Internet.

Workflow – A system whose elements are activities, related to one another by a trigger relation, and triggered by external events, which represent a business process starting with a commitment and ending with the termination of that commitment.

A-3 ASTD Glossary

[Learning Circuit Glossary, Compiled by Eva Kaplan-Leiserson](#)



Appendix B – Acronyms

AAR	After action review
BLM	USDI Bureau of Land Management
CKO	Chief Knowledge Officer
COP	Community of practice
FAA	Federal Aviation Administration
FS	USDA Forest Service
HC	Human capital
HR	Human resources
IM	Information management
IRM	Information resource management
IT	Information technology
KM	Knowledge management
KMWG	FS Knowledge Management Working Group
KOPF	IBM Knowledge and Organizational Performance Forum
KS	Knowledge sharing
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969, as amended
NFMA	National Forest Management Act of 1976
SME	Subject matter experts
USDA	US Department of Agriculture
USDI	US Department of Interior

¹ <http://ksharing.faa.gov/glossaryweb>

² Adrian Ward, Work Frontiers International

³ <http://ksharing.faa.gov/glossaryweb>

⁴ <http://ksharing.faa.gov/glossaryweb>

⁵ Chris Collison & Geoff Parcell, *Learning to Fly*, (Oxford, UK: Capstone Publishing Ltd., March 2001)

⁶ Thomas H. Davenport *et al*, *What's the Big Idea?: Creating and Capitalizing on the Best Management Thinking* (Boston, MA: Harvard Business School Press, April 2003)

⁷ Chris Collison & Geoff Parcell, *Learning to Fly*, (Oxford, UK: Capstone Publishing Ltd., March 2001)

⁸ Michael Fontaine, IBM Knowledge and Organizational Performance Forum (KOPF)

⁹ KM Consortium *KM Modeling Committee*

¹⁰ Larry Prusak, Babson College

¹¹ Geoff Parcell, British Petroleum

¹² Nicolas Gorjestani, The World Bank Group



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- ¹³ Thomas H. Davenport *et al*, *What's the Big Idea?: Creating and Capitalizing on the Best Management Thinking* (Boston, MA: Harvard Business School Press, April 2003)
- ¹⁴ Thomas H. Davenport *et al*, *What's the Big Idea?: Creating and Capitalizing on the Best Management Thinking* (Boston, MA: Harvard Business School Press, April 2003)
- ¹⁵ Adopted from Chris Collison & Geoff Parcell, *Learning to Fly*, (Oxford, UK: Capstone Publishing Ltd., March 2001)
- ¹⁶ Training Circular 25-20: *A Leader's Guide to After-Action Reviews*, http://www.au.af.mil/au/awc/awcgate/army/tc_25-20/table.htm (Washington, DC: Headquarters, Dept. of Army, September 1993)
- ¹⁷ Chris Collison & Geoff Parcell, *Learning to Fly*, (Oxford, UK: Capstone Publishing Ltd., March 2001)
- ¹⁸ Giora Hadar, on loan from the FAA, *Trust and KS*, January 2005
- ¹⁹ Chris Collison & Geoff Parcell, *Learning to Fly*, (Oxford, UK: Capstone Publishing Ltd., March 2001)
- ²⁰ Chris Collison and Geoff Parcell, *Learning to Fly* (Oxford, UK: Capstone Publishing Ltd., March 2001)
- ²¹ IBM Consulting
- ²² <http://ksharing.faa.gov/docreposit.nsf/e8deceb5cf26efa685256d41005edb67/e725f5deec5ee18385256c79005d44c9?OpenDocument>
- ²³ Lotus Software
- ²⁴ Peter Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York, NY: Currency Doubleday, January 1994)
- ²⁵ [http://ksharing.faa.gov/docreposit.nsf/e8deceb5cf26efa685256d41005edb67/79236489af43bf8085256d7a0060e19e/\\$FILE/IKO-TrustandKnowledgeSharing-2002.pdf](http://ksharing.faa.gov/docreposit.nsf/e8deceb5cf26efa685256d41005edb67/79236489af43bf8085256d7a0060e19e/$FILE/IKO-TrustandKnowledgeSharing-2002.pdf)
- ²⁶ <http://www.fs.fed.us/servicefirst/> is a joint FS and BLM site to work in a partnership
- ²⁷ <http://www.forestencyclopedia.net/>
- ²⁸ Deputy Chief for Programs, Legislation & Communication letter dated March 10, 2004
- ²⁹ <http://www.usda.gov>