

A Synopsis of:
Working Knowledge: How Organizations Manage What They Know

By: Thomas H. Davenport and Laurence Prusak

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909 N. Washington Street
www.trg-inc.com

Alexandria, VA 220314, USA
(703) 548-3535

Thomas H. Davenport is a professor of information management at the University of Texas, Austin. He has directed research at Ernst & Young, McKinsey, and CSC Index and authored the bestselling *Process Innovation*.

Laurence Prusak is a managing principal of the IBM Consulting Group in Boston and the worldwide competency leader in knowledge management for IBM. Formerly he was a researcher/consultant at Ernst & Young and Mercer Management Consulting.

Introduction

This book is an overview of the knowledge market. It offers insight into the development and management of knowledge systems. It addresses the hard and soft concepts of knowledge management as well as the importance of organizational culture. The authors have done a good job of introducing vocabulary and concepts necessary for successfully understanding the job of knowledge management.

Chapter 1 What Do We Talk about When We Talk about Knowledge? Pg. 1

The authors define knowledge as being neither data or information, but both. The discussion further states that data, information and knowledge are not interchangeable concepts.

Data is defined as a set of discrete objective facts about events. Organizations store data in some sort of technology system, usually by departments such as accounting, finance and marketing. Data, however, describes only a part of what happens in a transaction. It provides no judgment or interpretation and no sustainable basis of action.

Information is described as a message usually in the form of a document or an audible or visible communication. It has a sender and a receiver and is meant to change the way a receiver perceives something. This means information has an impact on judgment and behavior. It informs so it is data that makes a difference. Data becomes information when its creator adds meaning.

Some ways in which value is added to data to create information are:

- Contextualized: we know for what purpose the data was gathered
- Categorized: we know the units of analysis or key components of the data
- Calculated: the data may have been analyzed mathematically or statistically
- Corrected: errors have been removed from the data
- Condensed: the data may have been summarized in a more concise

Knowledge is defined as a “mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information... In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms.”

Just as information evolves from data, knowledge evolves from information through:

- Comparison: how does information about this situation compare to other situations we have known?
- Consequences: what implications does the information have for decisions and actions?
- Connections: how does this bit of knowledge relate to others?
- Conversations: what do other people think about this information?

The author believes that knowledge is valuable because it is closer to action than data or information. Better knowledge leads to measurable efficiencies in product development and production.

Some key components of knowledge are experience, truth, judgment and rule of thumb. Experience provides a historical perspective from which to view and understand new

situations and events. Truth is the difference between knowing what should happen and what does happen. Judgment is the ability to judge new situations and information in light of what is already known, and allows for the ability to refine knowledge in response to new situations and information. Rules of thumb are flexible guides to action that develop through trial and error and over long experience and observation.

Change in a global world makes knowledge vital to an organization. It can give an organization a competitive edge. The same technology is available to everyone so it cannot provide a long-term edge or competitive advantage. Competitors can almost always match the quality and price of a market leader's current product or service. If a company is knowledge-rich and knowledge-managing it will have moved on to a new level of quality, creativity, or efficiency by this time. A knowledge advantage is sustainable because it generates increasing returns and continuing returns.

It is important to remember that corporate size has an effect on knowledge management. The mere existence of knowledge somewhere in a large organization isn't beneficial. It must be possible to find the necessary information when it is needed. Computer networks have created a potential infrastructure for knowledge exchange. The new information technology is only the pipeline and storage system for knowledge exchange.

New technology does not create knowledge and cannot guarantee or even promote knowledge generation or knowledge sharing in a corporate culture that doesn't favor those activities. The availability of Lotus Notes does not change a knowledge-hoarding culture into a knowledge sharing one.

At the end of the chapter is a case study of British Petroleum's Virtual Teamwork Program. The planning, results and lessons learned are discussed.

Chapter 2 The Promise and Challenge of Knowledge Markets Pg. 25

This chapter is an attempt to understand the forces that drive knowledge exchange. The authors believe market forces power the movement of knowledge. Forces similar to markets for more tangible goods. Knowledge markets, like markets for goods and services, have buyers and sellers who negotiate to reach a mutually satisfactory price for the goods exchanged. People rarely give away valuable possessions, including knowledge, without expecting something in return.

Looking at the political economy of knowledge it is pointed out that in organizations where calculating and secretive hoarders of knowledge thrive, potential knowledge buyers will have no currency valuable enough to tempt them to share their expertise. In this case knowledge exchange will be minimal.

Players in the knowledge market include buyers, sellers, and brokers. Knowledge buyers are people trying to resolve a complex issue that does not have an easy answer. Knowledge sellers are people in an organization with an internal market reputation for

having substantial knowledge about a process or subject. Knowledge brokers make connections between buyers, those who need knowledge and sellers, those who have it.

All markets have a price system. The price system of knowledge depends on whether the knowledge is purchased from outside the organization or from internally. A dollar amount is set if an outside consulting firm, law firm or financial advisor is selected. Internally the medium of exchange is seldom money. It is believed there are three kinds of factors at work in this case, reciprocity, reputé, and altruism.

Reciprocity is at play when a knowledge seller is willing to spend the time and effort needed to share knowledge effectively if he expects the buyers to be willing sellers when he is in the market for their knowledge. Reputé is when a knowledge seller wants to be known as a knowledgeable person with valuable expertise that he is willing to share with others in the company. Altruism would be when a knowledge sharer is so passionate about his knowledge that he is happy to share it whenever he gets a chance.

Trust on the other hand can override the preceding factors. Without trust, knowledge initiatives will fail regardless of how thoroughly they are supported by technology and rhetoric. The authors believe trust is essential for knowledge markets to operate in an organization. They believe trust can be established through the following three ways:

- Trust must be visible
- Trust must be ubiquitous
- Trustworthiness must start at the top

It is important to know knowledge “market signals.” Signals that indicate both where knowledge actually resides in an organization and how to gain access to it. Some examples are position and education, and informal networks. Title or position is the most common formal signal indicating who has or should have valuable knowledge. Informal networks are informal practices that develop in organizations where people ask each other who knows what, who has previously provided knowledge that turned out to be reliable and useful.

It is important to keep in mind that knowledge markets are notably inefficient in most organizations. The right seller can be hard to find, it is difficult if not impossible to judge the quality of knowledge and the likelihood of payment is uncertain. Three factors that studies suggest often cause knowledge markets to operate inefficiently in organizations are the incompleteness of information about the knowledge market, the asymmetry of knowledge and the localness of knowledge.

Knowledge market pathologies are deep flaws that distort and inhibit the flow of knowledge. They include monopolies, artificial scarcity and trade barriers. Monopolies exist when only one person or group holds knowledge that others need. Artificial scarcity is created when the corporate culture of knowledge hoarding is a norm. Knowledge becomes very expensive not because it doesn't exist but because it is hard to get.

Trade barriers hamper organizational markets. The refusal to except new knowledge, the “not-invented-here” mentality, is a mirror image of the barrier created by hoarding. Another barrier is the class barrier, an unwillingness to give knowledge to or accept it from people in the organization who have relatively low status.

Chapter 3 Knowledge Generation Pg. 52

This chapter is concerned with the specific activities and initiatives firms take to increase their stock of corporate knowledge. Five models of knowledge generation are considered:

- Acquisition
- dedicated resources
- fusion, adaption
- knowledge network

Acquired knowledge does not have to be newly created just new to the organization. Problems regarding the purchase of knowledge include valuing the knowledge purchased and determining exactly where the knowledge resides in a firm. Companies buy other companies to generate additional revenue, to achieve a strategic size or product mix, to get access to new markets and to gain the skills of a senior management team. Knowledge acquired in an acquisition is usually a by-product of a purchase made primarily for other reasons.

Dedicated resources involve establishing units or groups specifically for a purpose. One example would be Research and Development departments. Unfortunately the down side to this approach is that returns on research take time to materialize and may be difficult to measure when they do come in. A firms focus on near-term profits may create pressure to cut costs by cutting R&D.

Fusion brings together people with different perspectives to work on a problem or project. This allows people to work together to come up with a joint answer. Some believe that pooling a variety of talents and backgrounds increases the chances of a successful outcome. It is important to note that the complexity and diversity of the forces brought together on a problem should at least be proportional to the complexity and diversity of the problem.

Adaptation is important in a world where new products from competitors, new technologies and social and economic changes drive knowledge generation. It is difficult to change something that has worked and may still be working. Companies may fail to see that change is happening or fail to acknowledge that it can affect them.

A firm’s ability to adapt is based on two principal factors:

- having existing internal resources and capabilities that can be utilized in new ways
- being open to change or having a high “absorptive capacity”

Knowledge Networks consists of communities of knowers, brought together by common interests, that talk together in person, on the telephone or via e-mail to share expertise and solve problems together. An informal network such as this can generate knowledge when each participant adds an incremental portion.

It is important that adequate time and space is devoted to knowledge creation or acquisition. This includes not only laboratories and libraries but also meeting places where knowledge workers can congregate.

Chapter 4 Knowledge Codification and Coordination pg. 68

The idea of codification is to put organizational knowledge into a form that makes it accessible to those who need it. An example of this is the legal system in which laws and decisions that act as precedents are codified in many texts.

The four principles of successful codification of knowledge are:

- Managers must decide what business goals the codified knowledge will serve
- Managers must be able to identify knowledge existing in various forms appropriate to reaching those goals.
- Knowledge managers must evaluate knowledge for usefulness and appropriateness for codification.
- Codifiers must identify an appropriate medium for codification and distribution.

Tacit knowledge is very difficult to reproduce in a document or database. This knowledge incorporates so much accrued and imbedded learning that its rules may be impossible to separate from how an individual acts. The codification process of the richest tacit knowledge in organizations is generally limited to locating someone with the knowledge, pointing the seeker to it, and encouraging them to interact.

A knowledge map can be an actual map, a knowledge “Yellow Pages,” or a cleverly constructed database that points to knowledge but doesn’t contain it. It can serve as an inventory. Its principal purpose is to show people in the organization where to go when they need expertise.

In creating a knowledge map organizations often survey employees to find what knowledge they have and where they get knowledge they need to do their jobs. Each individual has their own “mini map.” These private mini-maps are analyzed and assembled to form a public master map.

Computer technology can make knowledge maps much easier to use. They allow users to search by topic or key word. This makes information accessible to everyone on the corporate network. Lotus Notes and Web browser/intranet systems are common tools for publishing corporate knowledge maps.

A knowledge map also has a political dimension. If knowledge is genuinely important to an organization and those who have it are recognized and rewarded, then knowledge the

map will be a picture of status and success as well as a knowledge locator. Unfortunately, it is believed if politics plays no part in a knowledge management initiative, it is a safe bet that the organization perceives nothing of value is at issue. In this sense, political arguing over a corporate knowledge map would be a good sign.

Since capturing tacit information is difficult the risk of losing this information when an employee departs or only having it available when the person possessing the knowledge is available can be significant threats to the value of the organization's knowledge capital. It is important to attempt to capture some meaningful fraction of an expert's knowledge. Some ways to capture this knowledge are:

- Narratives – through distribution of tapes that tell a story of an important business event
- Embedded Knowledge – knowers use their expertise to develop a process or product that contains at least some of what they know.

The challenge to codifying knowledge is to leave its distinctive attributes intact, putting in place codification structures that can change as rapidly and flexibly as the knowledge itself.

Chapter 5 Knowledge Transfer Pg. 88

A vital ingredient to successful knowledge transfer is to allow employees time to talk to one another. Many organizations hire intelligent people and then isolate them or burden them with tasks that leave no time for conversation and little time for thought. Tacit and ambiguous knowledge is especially hard to transfer from the resource that creates it to others parts of the organization. In Japan it is common to rotate engineering executives into manufacturing and vice-versa so that the managers have an understanding of the entire process of new product development and production.

Transferring knowledge through personal conversations is being threatened through industrial-age managers and “virtual offices.” It is important that a company with workers that work at home or at clients arrange office time for these employees. Some companies have provided opportunities for knowledge sharing across the lines of departments or business units through the use of corporate picnics, knowledge fairs and specific rooms set aside for employees to meet and talk.

It is important to acknowledge that cultural factors can inhibit knowledge transfer. These inhibitors can slow or prevent the transfer of knowledge as well as erode some of the knowledge as it tries to move through the organization. These inhibitors include lack of trust, different vocabularies and frames of reference, and intolerance for mistakes or need for help. The author offers possible solutions for these inhibitors in this chapter.

An important thought to acknowledge is that people often judge the information and knowledge they get in significant measure on the basis of who gives it to them. One example of a possible problem due to this is the result of a company sending a junior engineer to a conference because he can be spared. A junior engineer's work isn't

considered as important as that of the senior staff, who can't take time off from essential projects. When junior engineers return with information and insight, few listen to them because they are not perceived as esteemed employees.

The authors believe it is time for firms to shift their attention to the more human aspects of knowledge transfer. Improved access to knowledge, document repositories and electronic communication should no longer be the main focus. Firms need to exploit both the hard and soft aspects of knowledge transfer.

Chapter 6 Knowledge Roles and Skills Pg. 107

Every firm should learn the importance of knowledge roles and teaching knowledge skills to all employees. Every employee should be encouraged to manage information. They should all create, share, search out and use knowledge in their daily routines. This includes secretaries, line workers and executives. One example given in the chapter is a company called Chaparral Steel. Line steelworkers visit customers to better understand their requirements, attend industry seminars and perform production experiments. Ideas come from everybody in the organization.

Organizations must also create a set of roles and skills to do the work of capturing, distributing, and using knowledge. It is unrealistic to believe strategic and tactical tasks that must be performed for successful knowledge management can be added on top of existing positions.

There are dedicated roles that require specific skills. Some of these require strictly technical skills: writing HTML and Perl scripts for Web sites, structuring and restructuring knowledge bases, and installing and maintaining such knowledge-oriented software packages as Lotus Notes.

The most intriguing new knowledge jobs are knowledge integrators, librarians, synthesizers, reports, and editors. These workers are skilled extracting knowledge from those who have it and frame and structure it. They must also maintain or refine this information over time.

Knowledge Project managers should have experience in project management, change management, and technology management. They should have backgrounds that emphasize the creation, distribution or use of knowledge.

Chief Knowledge Officers are now being acknowledged and appointed in many firms in the United States and a few in Europe. A chief knowledge officer in an organization must:

- Advocate for knowledge and learn from it.
- Design, implement and oversee a firm's knowledge infrastructure
- Manage relationships with external providers of information and knowledge and negotiate contracts with them.

- Provide critical input to the process of knowledge creation and use around the firm and facilitate efforts to improve such processes if necessary
- Design and implement a firm's knowledge codification approaches
- Measure and manage the value of knowledge, either by conventional financial analysis or by "anecdote management"
- Manage the organization's professional knowledge managers, giving them a sense of community, establishing professional standards and managing their careers.
- Lead the development of knowledge strategy, focusing the firm's resources on the type of knowledge it needs to manage most, and the knowledge processes with the largest gaps between need and current capability

Successful knowledge workers should have a combination of "hard skills" that include structured knowledge, technical abilities and professional experience, and "soft skills" such as a sure sense of the cultural, political, and personal aspects of knowledge. These knowledge management roles and responsibilities should be real jobs requiring dedicated resources. Few employees will be able to mix corporate knowledge management roles with their existing jobs.

Chapter 7 Technologies for Knowledge Management Pg. 123

Knowledge management is much more than technology, however Lotus Notes and the World Wide Web have been instrumental in catalyzing the knowledge management movement. Knowledge management technology is a broad concept that encompasses much more than Notes and the Web. Firms can apply a wide variety of technologies to the objectives of managing knowledge.

Expert systems, case-based reasoning and neural networks are some of the technologies used to attempt knowledge management. They all have their short comings proving that complex human knowledge can not be easily replaced.

One approach to using technology in knowledge management is the repository of structured, explicit knowledge, usually in document form. A good example of this is the Internet. In the past repositories were largely external to any particular organization. They were used to obtain competitive intelligence, market knowledge, or external technical, legal, or commercial knowledge. Many firms are now creating repositories of internally sourced structured knowledge.

New technologies are improving knowledge management however effective knowledge management cannot take place without extensive behavioral, cultural, and organizational change. Technology alone won't make a person with expertise share it with others nor will it make an employee who is uninterested in seeking knowledge get on a computer and start searching or browsing. The mere presence of technology won't create a learning organization, a meritocracy or a knowledge-creating company. Information technology is also relatively less helpful when it comes to knowledge creation.

Chapter 8 Knowledge Management Projects in Practice Pg. 144

In order to understand how knowledge is managed the authors studied 31 different management projects in twenty different companies. They observed various approaches to determine what makes a successful knowledge project. They discuss success factors for knowledge management projects and information or data management efforts. They note that the projects observed tend to devote substantial attention to human contributions which is the one characteristic that generally distinguishes knowledge from information or data.

Two examples of the different projects observed are 1) self-funding, that use a market-based approach and charged users for the service, and 2) a hybrid approach, relying on corporate funding during roll-out but requiring a transition to self-funding after some period of time. In some approaches a centralized knowledge management function managed or coordinated some projects, while others occurred in a more bottom-up and decentralized fashion. Some projects were fundamental to the existence of a firm while others were peripheral.

All of these projects however had someone in charge of the effort, some specific commitment of financial and human resources and of course a focus on knowledge as distinct from information or data. The projects also had three broad types of knowledge management objectives in common:

- Attempts to create knowledge repositories
- Attempts to improve knowledge access
- Attempts to improve knowledge cultures and environments

A typical goal of a knowledge repository is to take knowledge embodied in documents such as memos, reports, presentations and articles and put it into a repository where it can be easily stored and retrieved. Three basic types of knowledge repositories are:

- External knowledge – competitive intelligence
- Structured internal knowledge – research reports, product-oriented marketing materials and methods
- Informal internal knowledge – discussion databases full of know-how, sometimes referred to as “lessons learned”

Knowledge access projects acknowledge that finding the person with the knowledge one needs and then successfully transferring it from one person to another can be a difficult task. They focus on getting at the knowledge they have through connectivity, access and transfer.

Projects that attempt to establish an environment conducive to knowledge management must improve the value of knowledge capital through building awareness and cultural receptivity, establishing initiatives that change behavior as it relates to knowledge and improving knowledge the management process. Some firms have adopted higher-level

and less focused efforts to change general organizational attitude toward knowledge, while other firms make knowledge-related employee behavior a specific target of their projects.

One firm observed had adopted a knowledge management project with multiple fronts. These included:

- Development of an expert network
- Development of internal document repositories
- Efforts to create new knowledge
- Development of “lessons learned” knowledge bases
- A high-level description of the knowledge management process
- The use of evaluation and compensation systems to change behavior

Although it is too early for definite proof it is believed that knowledge projects with multiple fronts would be more effective than those that employ only one initiative.

The indications of success in knowledge management projects are not that different from the criteria companies use to measure success in other types of business change projects. The primary attributes used by the authors to define success in knowledge management include:

- Growth in the resources attached to the project, including staffing and budget
- Growth in the volume of knowledge content and usage
- The likelihood that the project will be sustaining beyond a particular individual or two, that is, the project is an organizational initiative, not an individual project
- Comfort throughout the organization with the concepts of “knowledge” and “knowledge management”
- Some evidence of financial return, either for the knowledge management activity itself (if it is seen as a profit center) or for the larger organization. This linkage need not be rigorously specified and may be only perceptual.

These indicators tell whether a project is successful or not but not what makes a knowledge project that way. The authors have identified nine factors that they believe to be the most telling variables that were common throughout the successful projects they observed.

- A knowledge-oriented culture
- Technical and organizational infrastructure
- Senior management support
- A link to economics or industry value
- A modicum of process orientation
- Clarity of vision and language
- Nontrivial motivational aids
- Some level of knowledge structure
- Multiple channels for knowledge transfer

The chapter discusses further each of these factors independently and why they are necessary for success. It also acknowledges that there are doubtless other factors that affect the success of knowledge projects, but firms should begin by addressing these nine steps. The three factors that are believed to matter the most are: a knowledge oriented culture, human infrastructure, and senior management support.

Chapter 9 The Pragmatics of Knowledge Management Pg. 162

In discussing where to start with knowledge management the authors acknowledge that common sense goes a long way. They believe the following insight is helpful:

- The place to start is with high-value knowledge
- Start with a focused pilot project and let demand drive additional initiatives
- Work along multiple fronts at once (technology, organization, culture)
- Don't put off what gives you the most trouble until it's too late
- Get help throughout the organization as quickly as possible

Consultants can help with designing and building big knowledge systems, mapping knowledge in some detail, assessing the current state of knowledge, and educating managers and workers about the fundamentals. The authors believe however, the actual implementation of knowledge management projects are the hard part and that it would make more sense to turn to outside help in the implementation of the project than in its design.

A good approach to Knowledge Management is to start with a recognized business problem that relates to knowledge. Some examples of business problems that might be traced to poor knowledge management include customer defections, poorly designed products, losses of key personnel, or a lower "win rate" for service engagements.

It is important to be aware that the implementation of new technology just for the purpose of knowledge management may be a waste of money. Knowledge behaviors desired from users of knowledge systems may be slow to emerge. Getting content into the new systems may also take a while. It may be necessary to hire new people, train them and create new processes and procedures.

A popular approach to getting started with knowledge management is to build on a company's quality or reengineering efforts. This involves compiling and leveraging "best practices" or effective ways to perform a process or subprocess that have been identified inside or outside the company. These processes are stored in electronic repositories for sharing around the organization and can become the nucleus of a knowledge management initiative.

Another good approach to beginning knowledge management is with a focus on organizational learning. Some concepts and approaches involved in this may include:

- Thinking about the organization as a "system"
- Building and facilitating communities of learning and practice.
- Focusing on issues of personal development and "mastery"

- Creating less hierarchical, more “self-organizing” organizational structures
- Planning with the use of scenarios

Each of these concepts addresses cultural and behavioral issues that are often hardest to change. It may be more appropriate to focus on them rather than begin with relatively easy to fix problems like technology.

In deciding where to anchor a knowledge management approach it is important to lead with a style that is consistent with the firm’s culture. An example would be to build knowledge management on top of technology initiatives and plans in a firm that is strongly technology based. Other firm cultures may be more oriented to finance and accounting, quality, or to organizational change programs.

The authors offer some final thoughts in that working with multiple fronts and not believing that any one tool is the answer to knowledge management, your knowledge management effort has a good chance of thriving. Knowledge and learning must always serve the broader aims of the organization. Otherwise it becomes at worst a liability and at best a distraction.