

**Turning the Prism:
Three Explorations of Knowledge Management
Through Networks and Communities of Practice**

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Turning the Prism: Three Explorations of Knowledge Management Through Networks and Communities of Practice

In The Social Life of Information (2000), John Seely Brown and Paul Duguid discuss the role of human interaction with information as information becomes knowledge. They identify “the shift toward knowledge” . . . linked with “a shift toward people”—the knowers. “Attending to knowledge . . . returns attention to people, what they know, how they come to know it, and how they differ.”

The conference organizers have posed questions which include attention to how organizational knowledge is used, renewed, stored, retrieved, transmitted and shared, as well as identification of the processes organizations use to synthesize and acquire knowledge resources. This paper will address these questions from the distinct viewpoints of the authors—three professional managers whose responsibilities include research and knowledge sharing in settings and cultures unique one from another. Brown and Duguid ask “. . . in what conditions do knowledge and best practice move?” What works for learning? Peter Drucker defines innovation as “change that creates a new dimension of performance”-- and then challenges us with the question: “How does success travel?”

In chapter five of their book, Brown and Duguid describe two specific approaches to learning linked to work and knowledge: “networks of practice” and “communities of practice.” This exploratory paper will share ways such networks and communities are contributing to organizational and individual knowledge and learning in three different settings:

- an organization which does energy research and policy
- a leadership development program within a university
- an information technology research and advisory firm

The authors are attentive to the ideas of Russell Ackoff, systems theorist and professor of organizational change and the stairsteps of both individual and organizational learning which move from data, to information, to knowledge, to understanding, and ultimately, to wisdom (see among other websites: www.outsights.com/systems).

Linking People, Process, and Technology

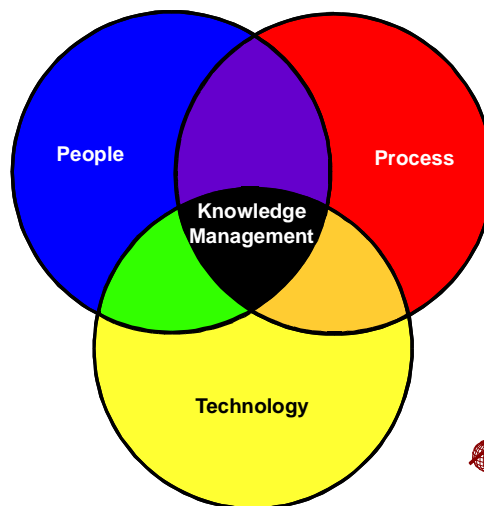
Successful knowledge management links together three concepts:

- **People**—who drive the process and must ultimately believe that their lives and careers will be enhanced through managing and sharing information with others.
- **Process**—which will create a methodology—planned or accidental—that will enable people to share knowledge.
- **Technology**—which facilitates sharing knowledge in a way that enhances its use and optimizes its value.

When these three concepts—people, process, and technology—intersect in the optimal way, the result is successful knowledge management.

Our discussion looks at the intersection of people, process, and technology from three different perspectives and concludes with lessons that we would like to share with others who strive to achieve the best of knowledge management.

Linking Together People, Process, and Technology



Source: Cambridge Energy Research Associates.
20215-2

Linking People, Process, and Technology in the Energy Industry

Susan H. Ruth

The energy industry is a widely-used term that refers to oil and gas exploration development companies, refiners, electric power developers, and power companies that deliver electricity. As the industry continues to change shape—and corporations are increasingly subject to unregulated markets to dictate energy prices—oil, gas, power, and integrated energy companies are becoming increasingly reliant upon knowledge management to manage internal operations as well as relations with suppliers and buyers.

Within the energy industry, the area of environmental strategy is becoming increasingly complex, as companies strive to meet the expectations of the local communities in which they operate while creating common standards and practices in global organizations. In our experience, working with companies on every continent, three approaches emerge as the most common.

- **Incrementalists**—focus on complying with all rules and regulations. They do not venture far from the tried and true practices. Incrementalists will have difficulty identifying how sharing information across business units might enhance their operations. They will share information if they see that it meets the need of the organization to comply with standard rules and regulations.
- **Innovators**—consider the technological solution. They are the most eager to look at the possibility of creating an automated database, for example, that each group in the company populates with the latest information and which can then be shared throughout the organization. They often will look for the beautiful solution rather than the practical approach.
- **Integrators**—view knowledge management as an integral part of their operations. They do not care if the solution is technologically based or whether it's an informal gathering among like-minded people. But they will work to integrate knowledge across business units and throughout the company.

Three Approaches to Knowledge Management



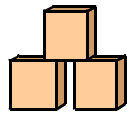
Integrators

View knowledge management as integral part of operations



Innovators

Emphasize technical aspect of knowledge management



Incrementalists

Focus on rules and regulations



Source: Cambridge Energy Research Associates.
20215-1

Most organizations consist of individuals who fall into one of the three categories: Incrementalist; Innovator; or Integrator. The challenge for managers is to identify the key cultural attribute of major units in the organization—are they Incrementalists? Or Innovators? Or Integrators? Creating project teams that contain members from all three groups is most likely to move the process forward.

This is particularly significant with multinational organizations within which there are “ragged edges” between the views of one geographic sector and other company sectors. For example, one of the most common “ragged edges” related to environmental strategy is between North American units and European units.

North American units tend to be either Incrementalists or Innovators. As Incrementalists, they will comply with all government environmental regulations. However, they are not inclined to go beyond local compliance with environmental regulations nor to identify how their actions could be useful to other parts of the organization. That is not the case with the Innovators who are eager to identify technical solutions that can be promulgated throughout the organization.

European units tend to be made up of Integrators. They see local environmental issues that they are addressing as part of broader societal concerns. They are inclined to believe that these concepts should be shared and adapted throughout the organization.

Clearly conflicts arise—the ragged edges—when people with different cultural perspectives try to apply their personal concepts of knowledge management to international operations.

Moving Toward Success in Knowledge Management

Identifying the key **people** who should champion any new knowledge management efforts is critical to success. Developing a **process** that allows all participants to discuss their concerns and contribute to solutions is another critical success factor. Finally, creating and using **technology** that facilitates ease of communication and does not become an inhibitor to knowledge sharing will enable knowledge management to bridge culture gaps across national boundaries.

Linking People, Process, and Technology In Leadership Development

Dr. Carol H. Sawyer

The world of leadership development in the United States is characterized by workshops, corporate training, conferences, a plethora of publications, and one-on-one mentoring practices. To a more limited extent, universities have created and now deliver graduate programs of leadership development, although often these programs are ones of leadership theory/leadership study, rather than leadership development and practice.

This discussion will explore the experience of networks and communities of practice within one specific university-based graduate level leadership development program. The perspective will be that of the individuals who have sought to enhance their organizational leadership effectiveness by enrolling as students.

Dr. Warren Bennis, distinguished professor at the University of Southern California, in founding The Leadership Institute, wrote that leadership development occurs in these six ways:

Leadership skill building happens through these methods:
Experience (learning by doing), *Example* (learning from other successful organizations), *Mentoring* (learning from senior, successful people), *Discussion* (Socratic small group seminars), *Technology* (ongoing, regular mutual sharing of information), and the oldest—but most neglected—method, *Reading and Reflection*.

The leadership development program which is the focus of this discussion is attentive to Dr. Bennis' leadership theories, as well as to the development approaches he outlined, several of which relate well to Brown and Duguid's networks and communities definitions. To better understand networks and communities of practices as experienced by the participants in the program, students were asked to read chapter five of Brown and Duguid's book, and then write about their own networks and communities of practice.

The People

The graduate students enrolled in this leadership development program are primarily mid-career professionals forty years of age or older. Sixty percent are women. They hold responsible positions—most of them in mid-level or senior management—across the economic spectrum: in law enforcement, manufacturing, nonprofit organizations, health care, education, finance, city

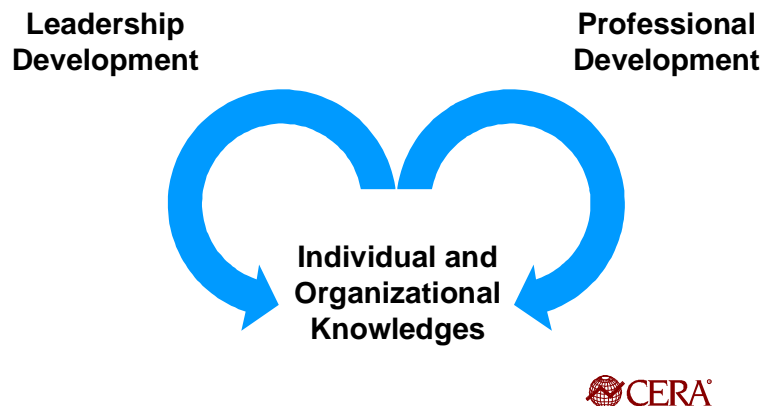
government, telecommunications, and virtually every other economic sector identified by the United States Department of Commerce.

The Process

Because these developing leaders are simultaneously graduate students and working professionals, they were asked to describe both workplace and academic setting experiences with networks and communities of practice, with attention to the “stairstep” continuum (data to wisdom) identified at the outset of this paper. Among the questions to which students responded, and the ones most applicable to this paper and the work of the conference were these:

Based on your experiences in both your professional work life and in graduate school, what do you believe are the conditions in which knowledge and best practice “move”? As Peter Drucker defines innovation—“success travelling”—what have you observed that makes this possible? How do you know when you are experiencing, and contributing to, the creation of “wisdom” as defined in our recent seminar?

The Virtuous Circle of Knowledge Management



Source: Cambridge Energy Research Associates.
20215-2

The Technologies

Students are engaged extensively in a variety of networks. Many of these are supported electronically (listserves); others relate to professional associations, conferences, newsletters. All modes are reflected in these experiences, which

often link thousands of individuals who are working in similar fields or share goals.

However, it is in the richness of ***communities of practice*** that students find significant individual and organizational learning occurring. And it is within the communities of practice—including the well-developed community that exists within the leadership development graduate program itself—that these individuals recognize and participate in knowledge management. They are articulate, and often passionate, about the conditions that make possible individual and organizational growth in knowledge, understanding, and sometimes wisdom.

“Success travels in my organization when there is time set aside to reflect on the overall issue, not simply the crisis at hand. It is important to recognize when the environment is open to sharing ideas honestly without retribution, and know there is an audience ‘to tell the story to’ and we are able to take risks: the tolerance for failure is known. . . We really grow when we collaborate to address the current needs and issues of each of our business units.” (Vice President of a financial institution)

“We learn when we recognize that we share a common goal, standard practices, and a common understanding of what it is we want to deliver.” (Program Manager, technology project in county government)

“Our greatest learning tool is understanding where others in our field succeed and where they fail. This is often shared on an electronic listserve. Many professionals eagerly share their results and experience because of the ease that the Internet allows. It is not intimidating; it is not face-to-face. This allows us to be open with our thoughts and experiences.” (Executive Director, substance abuse recovery program)

“I really liked [our speaker’s] definition of wisdom [two separate ideas/concepts coming together to form one new idea/concept]. Knowledge moves in my organization only when it is allowed to flow freely and is not forced.” (Administrator, real estate firm)

“I appreciate that in my organization there is openness to acknowledge when you don’t know the answer; this is a place of honesty, accountability, and mutual support. Here we create space for an open flow of ideas, thoughts and knowledge. It’s both comfortable and challenging and that is how we ensure mutual success.” (Manager, space exploration agency)

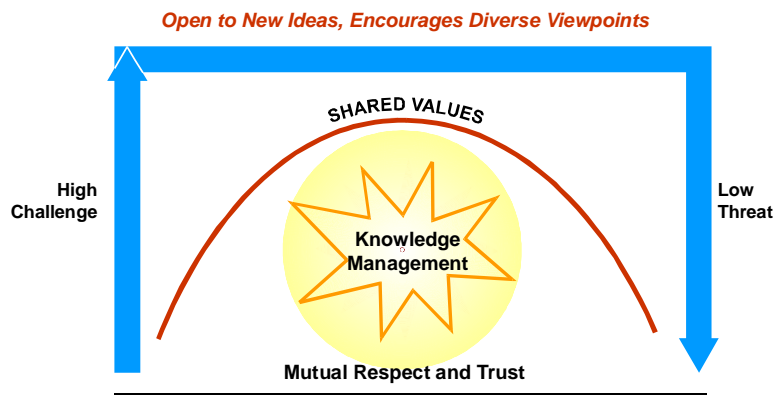
Some students/managers also recognized the ways in which their professional work settings limited organizational and individual learning:

“Wisdom cannot be created if individual members are not invested to a great extent, nor can knowledge be moved—particularly to new

members—if the existent knowledge is held in trust by only a select few. Individuals within the organization need to experience power distribution, authentic expressions of trust, and achievement. From my perception, while individual learning is occurring, there is little organizational learning taking place.” (Director, student affairs program in a university)

When does knowledge management—movement toward wisdom—occur? In leadership development, there is a consistent identification of the need to create and sustain communities characterized by mutual respect and trust, openness to new ideas, encouragement of diverse viewpoints, articulated and shared values, the practice of collaboration. The culture we create together must be one which allows for the creative tension between low threat and high challenge; in this type of setting we are freed to do our best, our most creative thinking. In this setting we can strengthen our ability to listen: to our selves, to other people, to our experiences. As Geoffrey and Renata Caine remind us: “We downshift under threat, and we respond positively to challenge. And we are capable of enormous creativity.”

Creating A Collaborative Culture



Source: Cambridge Energy Research Associates.
20215-2

Linking People, Process, and Technology In Information Technology Management

David R. Haedtler

In today's modern enterprise, Information Technology managers are usually responsible for building and supporting the infrastructure, tools and methodologies that support collaborative development, knowledge management and communication among employees and partners of their organizations. The success of such collaborative systems is usually more dependent on the **people** involved in the collaboration and the **processes** used to share and collaborate than on the **technologies** themselves. Most IT managers have witnessed a number of "technology" failures as the systems and programs with seemingly high potential languish from non-use or misuse by the intended subscribers.

Because of such high failure rates, IT managers tend to be among the most skeptical about the potential of technologies that enable collaborative communities. Paradoxically, because of the short cycle times of significant technology change, IT managers have a strong need to build and maintain strong communities of fellow managers and IT professionals to keep abreast of changes. IT managers who remain isolated from the ideas of other organizations run the risk of becoming "bigoted" in the approaches recommended by their own well-intentioned, but sometimes myopic staff members.

Gartner, Inc. is one of the world's top research and advisory firms, helping information technology and business managers identify and analyze the trends and technologies that shape the course of business. As part of this analysis process, Gartner sponsors "Best Practices Groups" with membership made up of managers from non-competing firms. Working as a team under the auspices of a clearly defined "code of conduct," these groups aim to:

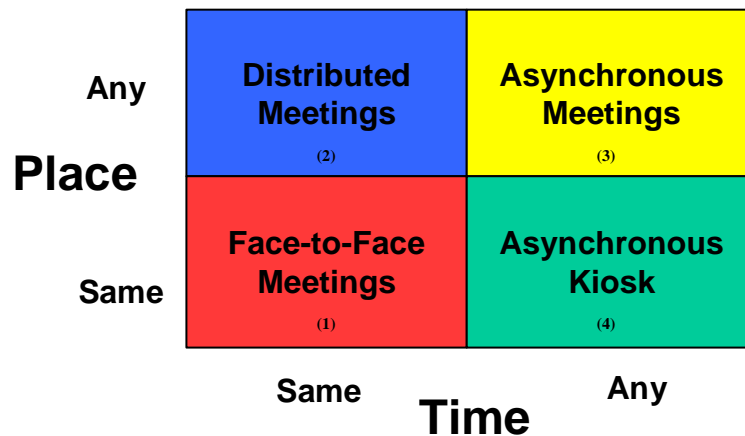
- Examine topics from multiple perspectives, resulting in better conclusions and a thorough understanding of the issues involved.
- Reduce or eliminate false starts and rework in making viable changes to the business.
- Develop strategies for re-engineering or fine-tuning current IT and business processes.

One of these groups, the Advanced Technology Management Best Practices Group (ATM Group), is comprised of advanced technology group managers or individuals responsible for the tracking and deployment of advanced technologies within their respective organizations. The group meets regularly to track technical changes, share management approaches, hear presentations from technical product managers and tour the facilities of unique, often unrelated, businesses

and industries. Members serve as consultants to one another under the guidance of a professional facilitator.

Members of the ATM Group were continually challenged to keep abreast of rapid technological change and developed a variety of communication models to help the group members keep in contact with one another. The group developed the following simple collaboration framework to determine the types of “meetings” in which they would be engaged. Note that quadrant four (Asynchronous Kiosk - Same Time/Any Place) was considered a “corner case”, applicable to kiosks at conferences and wasn’t really considered by the group.

Collaboration Framework



Gartner

- **Face-to-Face Meetings (Quadrant 1):** Once each quarter, the group gets together at a location hosted by one of the members. These sessions are electronically facilitated using *GroupSystems®*, an electronic meeting system. Each participant has access to a laptop PC during the meeting and uses the networked toolset to efficiently and anonymously share information with his peers while obtaining real-time, confidential, comparative data while the discussion is in process. Under the guidance of a professional facilitator, the group members can engage in electronic brainstorming, categorization, group outline development, anonymous Q&A and commenting, alternative analysis, and voting and surveying techniques. By using these techniques, the members have learned to work very efficiently and, because they can work in “parallel” rather than in

“sequential” mode, can obtain a significant amount of data and sharing in relatively short time periods. All group minutes and notes are confidential to the group members. Specific advantages include:

- Less data collection / more discussion time
 - Automates notes/record keeping
 - Encourages meeting preplanning
 - Enables parallel processing
 - Variety of meeting process tools
 - Anonymity of responses
- **Distributed Meetings (Quadrant 2):** Each month, the group gathers for a web-enabled audio conference. Audio conferences enable same-time/any place communication and, by adding a real-time visual component on the web (this group used *Placeware*®, but other similar web-projection tools are available), the facilitator /speaker is able to show Powerpoint slides, take online notes and conduct mini-surveys of the participants. The specific advantages of this method included:
 - Adds another channel to voice
 - Enables meeting structure
 - Focuses attendees through control of their view
 - Supports document creation/sharing
 - Easy, cheap, anywhere access
 - Facilitator back-channel to participants

Some of the members also added their fellow members to their own “Instant Messaging” community. Instant messaging adds an interesting “real time” component, in that members can see that selected other individuals are “at their desks.” This enables an individual member to send a quick note to a fellow member. The most common use of the instant message was the electronic equivalent of peeking into a co-worker’s office and asking “Got a minute?” and following with a phone call.

- **Asynchronous Meetings (Quadrant 3):** While the group, since its inception, was accustomed to communicating and collaborating with each other via e-mail, there were some disadvantages to this method.
 - Long “threads” of e-mails were often difficult to track and follow
 - Shared documents usually lacked version control
 - Each participant was required to manage his/her own filing system of asynchronous communications.

The group adopted a commercial “community-based system”, *Communispace®* as their preferred tool for asynchronous communication. Information sharing in the form of dialogue, brainstorming, posting of common references and links was now possible in a single location (via the internet) for all, available 24/7. The posting of member photographs, together with some real-time capability (instant messaging and chat) helped keep the site “active and alive” as it would be during a meeting, and members were discouraged from using e-mail for information dissemination, but rather, encouraged to use e-mail as a way of announcing new entries. The site was actively monitored and managed by the professional facilitator. The asynchronous meeting capability:

- Supported extended conversations
- Enabled multiple modes of interaction
- Enabled a form of “meeting structure”
- Supported document creation/sharing
- Enabled 24 x 7 access
- Included both task & relationship-building activities

While less active and successful than the other modes of communication, this mode has seen increased usage in recent months as companies have undergone travel restrictions.

Knowledge Management in the Information Technology World

Coping with short product life cycles and accelerated technological change is particularly challenging for IT managers who are responsible for implementing advanced technologies in their own organizations. A ***strong collaborative community*** is one way of helping to deal with this rate of change. Successful IT managers will avail themselves of cross-industry collaborative workgroups to keep abreast of changes and avoid missing significant shifts in information systems methods and technologies. While not a panacea, technology-enabled collaborative systems can facilitate ongoing interaction with groups of people who have a business need to share with one another.

What We Can Recognize as Patterns Across Our Different Settings

Each of us prepared our individual case descriptions above without consultation with the others. Yet a pattern emerged naturally: Susan's story of knowledge management in the energy industry focuses on individual approaches; Carol's story, centered on leadership development, broadens the focus to organizational life and culture; David's thoughts, linked to the field of information technology, bring attention to the greater environment which surrounds both individuals and the organizations of which they are a part and is attentive to inter-organizational learning approaches.

What do we know from turning the prism—from these three separate explorations of knowledge management in very different organizations and fields of work?

- We know that the technologies themselves—which are as diverse as the most sophisticated electronic approaches are from the age-old technology of face-to-face interactions—are valuable and important.
- We know that more important than any technology is the power that comes from shared goals and shared values.
- We know that learning happens with the recognition and commitment of individuals to open communication and to building new knowledge, understanding, and sometimes even wisdom from coming together.
- We know that such “coming together” needs to happen in ways which are open, collaborative, and grounded in the greater good for the organization, the society, the planet.
- We know that community forms because people make that choice, invest in it, and ensure that it lives and grows.
- We know that ours is a time when the environment within and beyond our organizations compels us to such ways of working.

The Community of Practice We Created to Prepare For This Conference

The authors of this document created a collaborative community in order to prepare this paper. While each section was done independently, the authors did significant collaboration and knowledge sharing during the course of the paper development in spite of the fact that we were often as many as nine time zones apart and also frequently traveling during the developmental time.

The original interaction of the authors was done via audio conference and was done almost “accidentally.” One of the authors (who prefers the telephone as her primary communication medium), was serving as the “linker” between the other two authors, engaging in a “shuttle diplomacy” . . . first calling one of the authors, then the other. This interaction continued through several iterations until one of the callers suggested that a five-minute three-way call might be more efficient. This quick “meeting” (quadrant 2 - same-time/different place) quickly resolved the issues and resulted in a loosely defined plan of attack.

The ensuing weeks entailed a variety of e-mails, phone messages and sporadic negotiations, communications and coordination (quadrant 3 - different time/different place). The authors--all three perceiving themselves as integrators--developed graphics, shared drafts, copied logos from each other’s web sites, accidentally destroyed drafts, crashed e-mail systems, lost entire versions, and basically attempted to collaborate in spite of themselves and their **technologies**.

The **process** used by the authors could most honestly be described as non-existent. Each of the authors worked in his/her own way according to individually and uniquely self-imposed deadlines, and the paper “emerged” rather than necessarily being “planned.”

Fortunately, there was a good level of trust among the three **people** involved in this collaboration. This group of three has, in fact, worked together for nearly fifty years and has shared values, shared experiences and a history of creating knowledge and generating products together. Their intimate knowledge of each other’s personal work styles, personalities and preferences turned out to be far more important than their failed technologies and non-existent processes. “Attending to knowledge . . . returns attention to people, what they know, how they come to know it, and how they differ” (Brown and Duguid).

Yes, it is possible for three siblings to form a collaborative community
for knowledge management.