CHAPTER FIVE
Reasoning Competency #4: Knowledge Management

Integrating and managing knowledge enhances human mental potential. Human knowledge, when applied in goal setting and planning, sets the stage for enlightened action and achievement.

Major Chapter Topics

Introduction to (Total) Knowledge Management

Knowledge Management Competency. Human development can only develop as far as our combined knowledge will allow. Whether we view ourselves as individuals, organizations or communities, we are both empowered and constrained by our current knowledge and our willingness and ability to acquire additional knowledge. Contemporary studies and writings indicate that knowledge may be systematically created, managed and used to enhance human development and to produce the products and services we need and desire. The *knowledge management competency* is a core reasoning element in becoming a learnership practitioner. It is the knowledge repository for situational learning artifacts, and in turn, it is the intellectual storehouse for the tacit and explicit knowledge used by adaptive leaders in advancing personal and social initiatives. Knowledge Management (KM) is enabled by Situational Learning (SL) which itself is supported by Systems Thinking (ST) and Pattern Recognition (PR).

The previous chapters in this book have laid a foundation for us to engage in a full discussion of knowledge management. In fact, from this point on it is fair to say we are learning and investigating the subject of Total Knowledge Management (TKM) – that meta-level application of knowledge management principles, practices and technology in which we identify, locate, acquire, organize, analyze, synthesize, apply, and share the knowledge we have obtained and decided to use. Systems thinking, pattern recognition, and situational learning have refined the manner in which we develop our knowledge; and now we are preparing to manage its use and application that will increase our performance and the performance of the organizations and communities we support. Finally, as we proceed it will become apparent that the Learnership Integrated Systems Architecture (LISA) is, in fact, a TKM artifact as well as a meta-cognitive framework for reasoning and a meta-system model for societal development.

Organizational Knowledge, Learning, and Intellectual Capital

In a time of drastic change it is the learners who inherit the future.
The learned usually find themselves equipped to live in a world that no longer exists.
Eric Hoffer

Organizational Knowledge and Learning. In their book Working Knowledge (1998) Thomas Davenport and Laurence Prusak make notable distinctions between data, information and knowledge. They say that: "*Data* is a set of discrete, objective facts about events in an organizational context, and data is most usefully described as structured records of transactions… Data describes only a part of what happened; it provides no judgment or interpretation and no sustainable basis for action…But data is important to organizations – largely, of course, because it is essential raw material for the creation of information. *Information* on the other hand, is meant to change the way the receiver perceives something, to have an impact on his judgment and behavior. It must inform; it's data that makes a difference. The receiver, not the sender decides whether the message he gets is really information – that is, if it truly informs him." (pp.2-3)

Knowledge, however, differs substantially from data and information. They comment that when it comes to knowledge: "Our definition expresses the characteristics that make knowledge valuable and the characteristics – often the same ones that make it difficult to manage well: *knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms*." (p.5)

Davenport and Prusak also stress that knowledge is something that humans create between one another. Information must be analyzed in terms of making selected *comparisons*, assessing potential *consequences*, looking for important *connections*, and having interpersonal *conversations* concerning what others think in order to convert pieces of information into knowledge. Additionally, they note that "knowledge should be evaluated by the decisions and action to which it leads." (p.6) Key components of knowledge are:

1. Experience – Knowledge develops over time through experience. Experts – people with deep knowledge of a subject – have been tested and trained by experience.

2. Ground Truth – Experience changes ideas about what *should* happen to what *does* happen.

3. Complexity – Experience and ground truth result in knowledge that enables people to deal with complexity.

4. Judgment – Knowledge contains judgment and is able to refine itself to new situations by interacting with its environment.

5. Rules of Thumb – Shortcuts to solutions for new problems that resemble problems previously solved by experienced workers.

6. Values and Beliefs – The power of knowledge to organize, select, learn, and judge comes from values and beliefs as, and probably more than, from information and logic." (pp.7-12)

Knowledge may also be understood to be a personal or organizational asset a sustainable knowledge advantage can be achieved through continuously learning and developing new and relevant knowledge. Knowledge, in fact, may be understood as a commodity that is always undergoing replenishment and innovation – so much so that there is a knowledge marketplace in which there are sellers, buyer, and brokers. And, as in any marketplace, there are exchanges based on reciprocity and a sense of value which may be quantified in terms of price, or qualified in terms of personal repute. Altruism is often a motivational force, and trust is an essential qualifier for acceptance and participation. At the macro-level, the peripheral benefits of knowledge markets are: (1) higher workforce morale, (2) greater corporate coherence, (3) a richer knowledge stock, and (4) a stronger meritocracy of ideas.

The process of knowledge management rests on three fundamental activities: knowledge generation, knowledge codification, and knowledge transfer. The key features of these activities are:

1. Knowledge Generation – Knowledge generation includes the identification, acquisition, development, and/or rental of data and information that can be turned into knowledge. The use of especially dedicated human resources such as librarians, information specialists, and consultants assist in this activity.

2. Knowledge Codification – The acquired information is organized for analysis and synthesis in terms of the organization's goals, current knowledge stores, preferred taxonomies, and methods of access and distribution. Attention must be given to handling both explicit and tacit knowledge.

3. Knowledge Transfer – Transfers of knowledge may be accomplished either formally through the downloading or exchange of printed or computer files, or through person-to-person conversation and dialogue.

[Author's Note: A rather simple way to understand the difference between the creation and use of *information* and that of *knowledge* is that knowledge is not an absolute concept or artifact. People can have different knowledge about the same topic. It is appropriate to take the view that everything outside one's own cognition and reflection is still only information until that person thinks about it, and judges that information, which then makes it that person's knowledge. The corollary therefore is that not all "knowledge" is created equal.]

Organizational Knowledge. In Chapter 8 of his book Knowledge in Organizations (1997) Lawrence Prusak addresses "Learning by Knowledge-Intensive Firms (KIFs)" contributed by William Starbuck. Starbuck says that" The term *knowledge-intensive* imitates economists' labeling of firms as *capital-intensive* or *labour-intensive*...[And] implies that knowledge has more importance than other inputs." He continues by saying *human capital dominates* in KIFs as opposed to financial or physical capital. Starbuck offers five conclusions about KIFs: (paraphrased, pp.150-153)

1. A KIF may not be information intensive – *Knowledge* is the stock of expertise, not a flow of information. Thus, knowledge relates to information in the way that assets relate to income.

2. In deciding whether a firm is knowledge-intensive, one ought to weigh its emphasis on esoteric expertise instead of widely shared knowledge – To make the KIF a useful category, exceptional expertise must make an important contribution. One should not label a firm as knowledge-intensive unless exceptional and valuable expertise dominates commonplace knowledge.

3. Even after excluding widely shared knowledge, one has to decide how broadly to define expertise – One can acknowledge both the legitimatized expertise of people who have formal education and respected credentials and/or the uniquely hard to acquire skill set and understanding of people who have learned from hands-on experience.

4. An expert may not be a professional, and a KIF may not be a professional firm – Not all experts are a member of, or subscribe to "professional associations." For example, management consulting and software engineering have specialists with deep expertise, but do not qualify as professions because they do not have the ethical codes, collegial enforcement of standards, assumed autonomy, and extra-organization cohesion most often a part of the professional practice.

5. KIFs may not be individual people – People convert their knowledge to physical forms when they write books or computer programs, design buildings, create financial instruments, etc. People also translate their knowledge into firms' routines, job descriptions, strategies and cultures.

Knowledge-intensive firms often have unique characteristics due to their effort to be knowledge, industry and marketplace leaders. One way this occurs is because of a peculiar emphasis on leadership of their special niche. Higher profits and longer-term survival come from successful competition and potentially monopolistic use of best practices. A second distinction is that KIFs are very effective in creating, applying and preserving knowledge and information from past successes to new problems and situations. They are skillful in research and learning, and in the adaptation of available information and knowledge into strategies, methodologies, and organizational improvement initiatives deemed to be valuable within their own firm and that of their clients. Thirdly, experts are usually aware that their expertise requires continual investment. According to Starbuck, "To learn, one must build up knowledge like layers of sediment on a river bottom. To learn effectively, one must accumulate knowledge that has long-term value while replacing the knowledge that lacks long-term value." (pp.158-159)

Organizational Knowledge Creation. In Knowledge, Groupware and the Internet (2000) David Smith presents "A Dynamic Theory of Organizational Knowledge Creation" by Ikujiro Nonaka (Chapter 1). Nonaka distinguishes between organizational information and organizational knowledge by indicating that: "…information is a flow of messages, while knowledge is created and organized by the very flow of information, anchored on the commitment and beliefs of its holder. This understanding and emphasis are an essential aspect of knowledge that relates to human action." (p.6) Nonaka stresses the fact that knowledge is only useful to the extent it has *meaning* to the values held by individuals involved, and that human beliefs and commitment to those beliefs are the basis for that *meaning*. Information that is incorporated into new knowledge is inherently valuable, however, information processing routines and technologies in and of themselves add little to the knowledge base of an organization – they can only support, but not guarantee improvement in organizational knowledge.

[Author's Note: This issue is prevalent in organizations wherein the CIO and IT specialists insist they "know" what the leaders and operational functions need to operate more knowledgeably, and proceed to provide them with IT gadgets without understanding how those gadgets might be used to improve actual work processes.]

Nonaka describes two dimensions of knowledge creation. One dimension is where a distinction is made between two types of knowledge: *tacit* knowledge and *explicit* knowledge. He says: "Explicit or codified knowledge refers to knowledge that is transmittable in formal, systematic language. On the other hand, tacit knowledge has a personal quality, which makes it hard to formalize and communicate. Tacit knowledge is deeply rooted in action, commitment, and involvement in a specific context." (pp.7-8) By way of further elaboration, tacit knowledge is considered to have both cognitive and technical elements. The cognitive elements pertain to the mental models, paradigms, and analogies the human mind uses to establish *perspectives* that help people define and operate in their perceived external world. The technical elements have to do with the concrete know-how, skills, and methods previously learned in order to successfully accomplish practical objectives in their real external world.

Nonaka makes a significant observation by saying that: "At a fundamental level, knowledge is created by individuals. An organization cannot create knowledge without its individuals. The organization supports creative individuals or provides context for such individuals to create knowledge. Organization knowledge creation, therefore, should be understood in terms of a process that 'organizationally' amplifies the knowledge created by individuals, and crystallizes it as a part of the knowledge network of the organization." (p.8) Nonaka continues by describing the synergistic individual-organization relationship in knowledge-building, and explaining that there exists in organizations a four-mode "knowledge conversion process" in which tacit and explicit knowledge is systematically exchanged. The four-mode process is paraphrased as:

1. Socialization – The *tacit to tacit* knowledge conversion/exchange between individuals who spend time together participating in shared experience.

2. Combination – The *explicit to explicit* knowledge conversion/exchange between individuals and groups who transfer codified knowledge claims and artifacts directly or indirectly to one another for sorting, recategorizing, or reconceptualizing.

3. Externalization – The *tacit to explicit* knowledge conversion/exchange in which individuals record their perceptions and understanding into documents and artifacts for use by others.

4. Internalization – The *explicit to tacit* knowledge conversion/exchange in which knowledge documents and holdings are used for learning by others.

The results of systematic, but mostly non-managed, information exchange and knowledge building among organization members should be continued organizational growth and development because the organization is able to maintain a competitive position in its industry and marketplace.

Another contribution made by Nonaka concerns his conceptualization of the Process of Organizational Knowledge Creation. The stages and activities Nonaka advocates (paraphrased, pp.17-27) are:

1. The Enlargement of an Individual's Knowledge – Individuals accumulate tacit knowledge through direct "hands-on" experience. High quality hands-on experience might, on occasion, required the redefinition of the nature of the "job." Also, the deep personal knowledge acquired is said to be "embodied" in the person when one's mind and body have been brought together.

2. Sharing Tacit knowledge and Conceptualization – The interaction of one's knowledge of experience and rational processes helps individuals build their own knowledge of the world. Allowing such individuals to associate in a "field" or a "self-organizing team" encourages collaboration built on trust and permits knowledge exchange and group acceptance of new knowledge. Dialogue directly facilitates this process by activating externalization at individual levels.

3. Crystallization – The process by which various departments within the organization test the reality and applicability of the concept created by the self-organizing team, and experience "dynamic cooperative relationships." To the degree that some overlapping knowledge exists between process activities shared functions exist which can expedite the implementation of new knowledge.

4. Justification and Quality of Knowledge – While organizational knowledge creation is a continuous process with no ultimate end, an organization needs to converge this process at some point in order to accelerate the sharing of knowledge beyond the boundary of the organization for further knowledge creation. This convergence may be defined as "justified true belief" in which the organization comes to trust as being accurate and useful. [Author's Note: There is no guarantee that what comes to be believed and trusted is in fact accurate and useful – which causes further correction and change to be extremely difficult unless learning is seen as a continuous process.]

5. Networking Knowledge – The realization of the new concepts just described represents a visible emergence of the organization's knowledge network which now becomes enhanced by the addition of the new learning and knowledge. As the knowledge spreads it becomes the basis for "how we think and work around here." This represents a change in organizational culture.

Nonaka comments that management of the above *organizational knowledge creation process* can follow one of three principle leadership strategies described below:

1. Top-Down – Top management becomes the agent of change in a large powerful headquarters operation, commanding what needs to be done and putting emphasis on communication and delegation. Hierarchy is respected and chaos is not allowed.

2. Bottom-Up – Organizational entrepreneurs are the agents of change operating in small organization and acting as sponsors of new ideas and methods. Emphasis is on self-organization, inefficiency and chaos are evident as well as autonomy and ad hoc teamwork.

3. Middle-Up-Down – A self-organizing team becomes the agent of change in a larger organization populated by a team-led culture. Leaders are catalysts for learning and action and contribute to organizational knowledge creation. Focus is on accumulating sufficient tacit and explicit knowledge, gaining upper management support for desired action, and spreading new knowledge and processes to others throughout the organization.

[Author's Note: Organizations lacking in cultural trust will find it difficult using anything other than the Top-Down approach because the level of voluntary person-to-person information exchange is low and politics and suspicion are high.]

Organizational Learning Systems. Another contribution by David Smith, in Knowledge, Groupware and the Internet (2000) is "Understanding Organizations as Learning Systems" by Edwin Nevis, Anthony DiBella, and Janet Gould (Chapter 2). The authors report their research and model based on the themes that (1) all organizations are learning systems; (2) learning conforms to culture; (3) styles of learning varies between learning organizations; and (4) there are generic processes that facilitate learning. Given this perspective, Nevis et al, explain that their two-part model focuses first on seven *learning orientations* and then on ten *facilitating factors*. They say that diligent analysis and comparison of the *orientations* with the *factors* enables organizational leaders and consultants to rationally proceed with an effort to enhance the organization's ability to acquire, utilize, and disseminate information and knowledge. The orientations and factors for consideration are:

Learning Orientations:

1. Knowledge Source – Internal-External. Preference for developing knowledge internally versus preference for acquiring knowledge developed externally.

2. Product-Process Focus – What? How? Emphasis on accumulation of knowledge about what products/services are versus how an organization develops, makes, and delivers its products and services.

3. Documentation Mode – Personal-Public Knowledge is something individuals possess versus publicly available know-how.

4. Dissemination Model – Formal-Informal. Formal, prescribed, organization-wide methods of sharing learning versus informal methods, such as role modeling and casual daily interaction.

5. Learning Focus – Incremental-Transformative. Incremental or corrective learning verses transformative or radical learning.

6. Value-Chain Focus – Design-Deliver. Emphasis on learning investments in engineering/production activities versus sales/service activities.

7. Skill Development Focus – Individual-Group. Development of individual's skills versus team or group skills.

Facilitating Factors:

1. Scanning Imperative – Awareness and curiosity about the external environment and its impact on the organization.

2. Performance Gap – Awareness of a gap between actual and desired state of operations.

3. Concern for Measurement – Discussion and use of metrics as a learning activity.

4. Experimental Mindset – Failures accepted not punished, but used as a learning opportunity.

5. Climate of Openness – Open communications throughout organization; debate and conflict accepted as ways to solve problems.

6. Continuous Education – On-going commitment and clear support for all members' growth and development.

7. Operational Variety – Appreciation of diversity of perspectives, methods, and competencies.

8. Multiple Advocates – New ideas and methods advanced by employees at all levels; multiple idea champions.

9. Involved Leadership – Leaders are engaged, interactive and assist in educational programs.

10. Systems Perspective – Ability to recognize interdependencies between problems and solution, organizational units, and company goals and customer needs.

[Author's Note: The creation and use of *personal knowledge* within an organizational context is of concern to individual employees because knowledge leads to competence and competence leads to performance – which should be related to remuneration. Also, the degree to which personal tacit knowledge is made explicit and exchanged with others in the organization to create *organizational knowledge* determines how well organizational leaders can build and retain meaningful marketplace relationships and produce the products and services that satisfy their customers' most deeply held needs. Organizations have a vested interest in becoming better at learning and knowledge creation. The learnership reasoning competencies of systems thinking,

pattern recognition, and situational learning all impact the ability of individuals and organizations to generate, codify, and transfer knowledge of greater quality and utility than would occur just by happenstance.]

Knowledge Management and Intellectual Capital

Intellectual Capital. In his book Intellectual Capital: The New Wealth of Organizations (1997) Thomas Stewart says that an ever-increasing percentage of people are becoming "knowledge workers." They work in knowledge-intensive companies in which a higher percentage of remuneration goes to the knowledge workers that make the largest contribution to the company's profitability. More and more knowledge workers are becoming the sought-after professionals in their respective workforces as they are the ones who plan, organize, and execute their own work in coordination with others essential to the accomplishment of their objectives. They are the ones who acquire, analyze, and use information to create new knowledge that empowers others to lead and operate the organization more efficiently and effectively thereby achieving marketplace success and rewards.

Intellectual capital is the term used to describe that special category of knowledge that is a foundational asset of the organization's existence and ability to provide marketplace value. Stewart says that the intellectual material or "smarts" that makes up intellectual capital, while *intangible*, needs to be formalized, captured, and leveraged to produce higher-valued assets, but that can only be done (1) when there is a purpose or strategy that requires the use of that intellectual capital, and (2) because much intellectual capital is tacit, that knowledge needs to be made explicit for others to learn and accept it into their tacit understanding. *Knowledge management techniques that provide tacit to explicit to tacit exchange of information and knowledge are essential for organizational learning to occur, and that in turn, creates the intellectual capital so valuable for development and success.*

Stewart identifies three types of intellectual capital that provide sufficient purpose and focus for determining where management of knowledge creation can make a difference:

1. Human Capital – The source of creative energy, knowledge/skills, innovation, and renewal. "Human capital grows two ways: when the organization uses more of what people know, and when more people know more stuff that is useful to the organization." (p.87)

2. Structural Capital – The tools, methods, processes, and physical property needed to use, transport, store, or protect information and operations. Structural capital is particularly useful in that it can "codify bodies of knowledge that can be transferred…and connect people to data, experts, and expertise." (p.132)

3. Customer Capital – The value of an organization's relationship with the people with whom it does business. "You cannot own customers, any more than you can own people. But just as an organization can invest in employees not only to increase their

value as individuals but also to create knowledge assets for the company as a whole, so a company and its customers can grow intellectual capital that is their joint and several property." (p.155)

The Wealth of Knowledge. Thomas Stewart continues his explanation of the important of knowledge management and intellectual capital in his book: The Wealth of Knowledge: Intellectual Capital and the Twenty-First Century Organization (2001). He comments that: "It has become standard to say that a company's intellectual capital is the sum of its human capital (talent), structural capital (intellectual property, methodologies, software, documents, and other knowledge artifacts), and customer capital (client relationships)." (p.13) Stewart also provide examples of business and industries that are relying more and more on intellectual assets in place of former strategic advantages such as geography, regulation, and vertical integration to expand their competitiveness and customer presence. He says emphatically: "You don't need physical assets to gain entry into a business. The specific asset – the differentiating asset – is not the machinery. It's the software and the wetware – the stuff between your ears. It's the knowledge, stupid." (p.18)

Stewart reiterates the view that success using an intellectual capital approach is tied directly to having a *strategy* for deciding what needs to be known and managed and an *implementation methodology* for accomplishing what needs to be done. He advocates a four step intellectual capital strategic intent (Chapter 4, paraphrased):

1. Identify and evaluate the role of knowledge in your business, as inputs, process, and output.

2. Match the revenues you've just found with the knowledge assets that produce them.

3. Develop a strategy for investing in and exploiting your intellectual assets.

4. Improve the efficiency of knowledge work and knowledge workers.

Concurrent with developing a knowledge strategy, an investment methodology should be implemented (Chapter 5, paraphrased):

1. Create knowledge leadership – Identify someone with clout in the organization to administratively lead knowledge enhancing initiatives.

2. Creating knowledge assets – Don't manage all your knowledge, just that which is critical.

3. Creating knowledge connections – Look to leverage knowledge. Ask "Who else can use this stuff?"

4. Managing in real time – Information moves at the speed of light, and business should learn to move as fast.

5. From plan to signal – "Traditional organizations are run like buses while real-time organizations are run like taxis responding to a waving are to voice on the radio." (p.96)

6. Haste eliminates waste – Apply just-in-time customer response; produce and deliver without large lead times or inventories.

7. Double the value of knowledge – Share information on customer forecast, order rates, order backlog, level of inventories, product availability, and delivery time with everyone in the supply chain – and optimize the interrelationships for reliable customer service.

8. Fly by wire – Information feedback rapidly provided enables immediate response.

[Author's Note: Stewart's articulate explanations are a powerful stimulant to modifying how organizations are both designed and managed. We are in an era of rapid change and extreme competition where being late to the game means not playing in the game. Organizations in most industries are finding that being *adaptable* to their environment – customer demands, supply sources, emerging technologies, etc. is not only useful, it is imperative. Knowledge management of rapidly growing human, structural and customer intellectual capital is what a "learning organization" looks like.]

Stewart takes a closer look at the nature of work and the change in workers in Chapter 12. The rise of the new knowledge worker has occurred as fast as the changes in organizations and their competitive industries. Today, an increasing number of employees are assertively managing their own careers, continuing education opportunities, and choices of work locations and environments. Whether their newly found semi-independence is being forced on them or by personal choice, they are in fact negotiating their terms of employment and seeing themselves as co-investors (human capitalists) in their employers along with other stakeholders and financial investors. Stewart speaks of a pattern of "…mobility across employers, stability across profession [and says that it] is one reason learning has taken on such psychic importance for human-capital-investing employees. Schooling, or at least credentials, partly replaces promotions, which flat organizations can't offer. Quasi-professional certification exams are showing up in all kinds of general management areas, such as project management, management consulting, and human resources management." (p.253)

The rise of the new human capitalist / knowledge worker requires organizations to modify the educational and training objectives of its employee development program. Emphasis now has to be on (1) *action learning* wherein learning by doing real work with others is most useful; (2) *just-in-time learning* for assistance on immediate learning needs; (3) training for today's job while at the same time training for increased flexibility and adaptability to change; and (4) focus on the key skills of the most productive professional knowledge workers.

[Author's Note: Each of us is personally building our stock of human capital so we can bargain more effectively with our employers for an appropriate return on our investment. Viewed from a learnership point of view, Stewart's development of the concept of intellectual capital is not only

an essential feature in this chapter on the knowledge management competency, but also informative on the competencies of situational learning and adaptive leadership. Together, excellent learning, knowing and leading provide a strong foundation for the work of our learnership practitioners.]

Social Capital. In their book In Good Company: How Social Capital Makes Organizations Work (2001) Don Cohen and Laurence Prusak quote Robert Putnan, the Harvard political scientist saying that: "social capital refers to features of social organizations such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit." (p.3) The authors own definition is that: "Social capital consists of the stock of active connections among people; the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible. They say that social capital bridges the gap between people and that this type of connection supports collaboration, commitment, ready access to knowledge and talent, and coherent organizational behavior." (p.4) Also, they comment that: "…without social capital, organizations simply cannot function…social capital can benefit organizations in particular ways…we explore those benefits throughout this book, and summarize them here as follows:

1. Better knowledge sharing, due to established trust relationships, common frames of reference, and shared goals.

2. Lower transactions cost, due to a high level of trust and a cooperative spirit (both within the organization and between the organization and its customers and partners).

3. Low turnover rates, reducing severance costs and hiring and training expenses, avoiding discontinuities associated with frequent personnel changes, and maintaining valuable organizational knowledge.

4. Greater coherence of action, due to organizational stability and shared understanding." (p.10)

Cohen and Prusak organize their book and argue their perspectives in six overarching topical areas which are herewith listed along with selected highlights.

1. Trust – "Social capital depends on trust. The relationships, communities, cooperation, and mutual commitment that characterize social capital could not exist without a reasonable level of trust." (p.29)

   "Trust is largely situational: a particular person may be quite trustworthy in one set of circumstances but not in another, where particular pressures, temptations, fears, or confusion may make him unreliable." (p.30)

   "A powerful sense of higher organizational purpose can sometimes foster trust. A sense of duty, patriotism, or idealism can help generate trust as well as commitment." (p.41)

2. Networks and Communities – "People do not always look for the optimum economic exchange, the best knowledge, or the greatest skill when they seek colleagues, partners, or suppliers. Their own past and the experience and norms of their organization or group powerfully shape their choices." (p.55)

   "Though network building mainly happens between individuals, it contributes to an organization's social capital. Many of the benefits individuals derive from networks and communities – a sense of membership and purpose, recognition, learning, and knowledge – can also pay huge benefits to the organization." (p.61)

   "…the very cohesion of commitment to a community can be a problem if that makes it clannish, insular, excessively idiosyncratic, or, in extreme cases, corrupt or destructive." (p.70)

3. Space and Time to Connect – "In walking, people become part of their terrain; they meet others; they become custodians of their neighborhoods. In talking, people get to know one another; they find and create their common interests and realize the collective abilities essential to community and democracy." (p.89)

   "Speed matters, but not at the expense of everything else. In addition to damaging social capital, speed can limit the basic thoughtfulness that complex work requires…Trust, understanding, commitment, and the habit of reciprocity develop over time." (p.94)

4. Social Talk and Storytelling – "Conversation includes gossip, stories, the mutual discovery of meanings, the negotiation of norms and aims, expressions of sympathy and disapproval, bewilderment and understanding. It implies mutuality and a kind of engagement or relationship." (p.107)

   "The ability of stories to make sense of events along with their ability to evoke the real-life feel of a situation and to illustrate rather that assert the values, norms, feelings that motivate people gives them tremendous power to communicate the richness and texture of a culture…When people can locate themselves in the story, their sense of commitment and involvement is enhanced." (p.117)

5. The Challenge of Volatility – "The forces driving volatility are real. Mobility, exciting opportunity, and extremely low unemployment tempt people to move from job to job. Organizations change their composition and even their aims and behaviors in the face of global competition, converging companies and technologies, new products and new customer demands." (p.135)

6. The Challenge of Virtuality – "The social capital implications of Virtuality are complicated, but the questions at least are fairly clear. To what extent can people develop and maintain social capital by electronics means? Can the trust-building, network-building meetings and conversations we have described as sources of social capital occur virtually?" (p.157)

[Author's Note: The concept of *social capital* adds another dimension to Stewart's human, structural, and customer intellectual capital of organizations by emphasizing the interpersonal and relational aspects of organizational work. One observation, however, might be that Cohen and Prusak are overly persuaded by the interests and needs of the extraverted and the NF and SF personality types to the exclusion of those people who are introverts or with ST and NT interpersonal preferences. Reference is made to Chapter Two on Pattern Recognition.]

Knowledge Management and Human Resource Management

Human Resource Management in the Knowledge Economy. Mark and Cynthia Lengnick-Hall, authors of a book similarly titled (2003), take on the challenge of describing the roles and responsibilities of HRM professionals in helping organizations adapt to the emerging knowledge economy. They talk about a new imperative for human resource management to assist organizations in building strategic capabilities in the use of their most important intangible assets, human beings. They discuss human capital and structural capital development in a manner similar to Thomas Stewart, but they introduce the term "Relationship Capital" that encompasses Stewart's customer capital and much of the social capital characteristics presented by Cohen and Prusak. They define relationship capital as: "…the interpersonal connections across members of the firm and relationships with suppliers, customers, and other firms that provide the basis for cooperation and collaborative action." (p.4)

The authors point out that the HR function in most organizations has evolved into a highly efficient employment bureaucracy that served the industrial world fairly well with its focus on conformance to government policies and intra-organizational strife between management and the workforce. They say, however, that: "Staying within the functional bureaucratic boxes that HRM has created for itself will only undervalue its impact on organizational effectiveness. Failure to change with the demands of the new economy will mean that formal HRM will become less important, whereas new challenges such as knowledge management and human capital management will be absorbed elsewhere within the organization." (p.14)

As far as defining HRM work, the authors note that: "HRM is no longer simply focused on 'managing people' in the conventional meaning of the phrase. Human resource management is now responsible for managing the capabilities that people create and the relationships that people must develop." And, they continue to say: "The rapid evolution of electronic-HR delivery systems is pushing more information in more usable formats to employees and managers who can use it directly for the benefit of their organizations." (p.30) Given this situation the authors suggest that there are new roles and challenges that the HRM careerists need to embrace and take action to transform HRM departments into influential contributors to organizational performance. They introduce four roles that properly educated and skilled HR professionals could learn to perform:

1. Human Capital Steward – The role requires accumulating, concentrating, conserving, complementing, and recovering the collective knowledge, skills, and abilities within an organization. (p.33)

2. Knowledge Facilitator – The new role for HRM is to facilitate organizational learning and knowledge sharing between employees, among departments, throughout the organization, and with external co-producers. (p.38)

3. Relationship Builder – The HRM function will create programs and practices that enable employees to encourage, facilitate, nourish, and sustain relationships among fellow employees, customers, suppliers, firms in complementary arenas, and at times even rivals. (p.39)

4. Rapid Deployment Specialist – The HRM function will be required to rapidly assemble, concentrate, and deploy specific configurations of human capital to achieve mission-specific strategic goals.

[Author's Note: The education, training and development of an organization's workforce have always been critical responsibilities in preparing to meet market competition and to deal with the changes being experienced in most industries. The HRM component of the Personnel Function should always have played a role in human capital strategic planning and in tactical skill development in the pursuit of greater organizational efficiency and effectiveness. The knowledge economy makes it even more important that this internal responsibility be recognized and acted upon. The learnership practitioner attitudes, skills, and behavior being advocated in this book are meant to incorporate the four roles just described, and to illustrate the development HR professionals may want to pursue.]

Managing Knowledge Workers. In his book Thinking for a Living (2005) Thomas Davenport says that: "Knowledge workers have high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution, or application of knowledge." [And] "Knowledge workers think for a living. They live by their wits – any heavy lifting on the job is intellectual, not physical. They solve problems, they understand and meet the needs of customers, they make decisions, and they collaborate with other people in the course of doing their work." (p.10) His investigation into knowledge worker networks and learning activities indicted that that: "They tended to make good decisions in investing time and effort in developing new domains of expertise. They also seemed to get more learning out of a given experience and continually update their skills, expertise, and social awareness as a natural part of their work." (p.149) Davenport makes the following observations on the nature and process of the knowledge workers' work: (p.191)

1. From overseeing work, to doing it too.

2. From organizing hierarchies, to organizing communities.

3. From hiring and firing workers, to recruiting and retaining them.

4. From building manual skills, to building knowledge skills.

5. From evaluating visible job performance, to assessing invisible knowledge achievement.

6. From ignoring culture, to building a knowledge-friendly culture.

7. From supporting the bureaucracy, to fending it off.

8. From relying on internal personnel, to considering a variety of sources.

He also comments on what he terms *good management hygiene needed* in the knowledge age: (pp.203-206)

1. Putting the organization in context.
2. Brokering and learning from dissent.
3. Redesigning and improving knowledge work.
4. Orchestrating group decisions.
5. Harnessing good intent.
6. Enabling boundary-spanning.
7. Facilitating social networks.

In summary, high performing knowledge workers learned management from their experience, have had a wide variety of jobs from which to learn and integrate learning, have learned to see problems and opportunities from different perspectives, have built a diverse network of people to call upon, and have avoided unnecessary distractions when having chosen something important. They continue to invest in domains of learning where they are already competent while taking on additional knowledge areas, and they browse codified resources and then follow up by human contact to fill in the details.

[Author's Note: Management of this type of worker requires an open, collaborative goal setting dialogue in which what to do is discussed without too much focus on how to accomplish the task. Expertise is acknowledged, measures to be used are discussed, and feedback on issues and progress is expected. This style of management comes close to the full delegation mode of management advocated by many leadership experts. It is the style preferred by adaptive leaders in the next chapter of this book.]

Applying Knowledge Management in Organizations

The only valuable knowledge is that which equips us for action,
and that kind of knowledge is learned the hard way – by doing.
Karl Sveiby

Knowledge Management Strategy and Implementation

Organizational KM Practices and Initiatives. Karl Wiig, author of People-Focused Knowledge Management (2004) has written a comprehensive practical guide for understanding and implementing knowledge management. After the extensive descriptions in his text he provides an appendix that suggests five approaches for going about implementing knowledge management in organizations – anyone or all of which can have significant benefit in organizational performance. These are:

1. General Business Focus – "Manage knowledge effectively to make people – and the whole enterprise – act intelligently to sustain long-term viability by developing and deploying highly competitive knowledge assets in people and other manifestations." (p.299)

2. Intellectual Asset Management Focus – "Manage intellectual assets (intellectual capital) – people-based knowledge, products, services, patents, technologies, practices, customer relations, organizational arrangements, and other structural assets." (p.300)

3. Innovation and Knowledge Building Focus – "Build better knowledge assets to be available within the enterprise for improved competitiveness through personal and organizational innovation, organizational learning and R&D, and acquisition of outside knowledge, supported by motivators to innovate and capture valuable information." (p.300)

4. Knowledge Sharing and Information Transfer Focus – "Make available best available knowledge and facilitate its use at each point of action to allow knowledge workers to deliver quality work for all activities, operation, and plans throughout the enterprise; facilitate communications between individuals; facilitate locating relevant information; screen information for appropriateness; reformat and organize information to facilitate end-use." (p.301)

5. Information Technology-Based Knowledge Capture and Delivery Focus – "Organize, structure, store, and deliver information with IT and automation to the largest practical extent; effectively capture knowledge with IT support; obtain knowledge from unorganized databases; organize knowledge to facilitate its application; distribute knowledge to point of action." (p.302)

Additionally, Wiig provides a comprehensive list of KM initiatives and practices culled from the efforts of the world's best KM-based organizations: (pp.303-308)

1. Promote a knowledge-supportive mentality and culture.
2. Measure intellectual capital and create an intangible asset monitor.
3. Change and facilitate cultural drivers.
4. Create and foster collaborative practices.
5. Provide formal education and training.
6. Foster communities and networks of practice.
7. Conduct town meetings and conduct knowledge cafes.
8. Build and operate expert networks.
9. Capture and transfer expert know-how.
10. Capture and transfer expert concepts to other practitioners.
11. Capture and transfer expertise from departing personnel.
12. Capture and apply decision reasoning.
13. Capture and transfer competitive knowledge.
14. Create lessons learned systems.
15. Conduct after action reviews.
16. Provide outcome feedback.
17. Pursue knowledge discovery from data (KDD).
18. Implement and use performance support systems and knowledge-based applications.
19. Build and deploy knowledge bases.
20. Deploy information technology tools for knowledge management.

[Author's Note: Karl Wiig's book is recommended reading for anyone with a desire to understand the intricacies of knowledge management. His summaries, above, are particularly useful in this book because they provide the learnership practitioner with a thumbnail sketch on elements that should be considered when planning to knowledge-enable a business function, an organizational process, or the enterprise itself.]

The focus of attention now moves deeper into the subject of knowledge management as one of five reasoning competencies that together, empower individuals operating as learnership practitioners, to optimize their personal, organizational, and community social accomplishments. Two learnership architecture diagrams are presented and described to capture the essence of KM and to advance the ongoing construction of the summary level learnership model.

Knowledge Management Competency: Social Systems Integration

A core premise of this book is that we as human beings have the opportunity and responsibility to manage our human social systems to the degree our genetic inheritances permit us to do so. As individuals and in groups of all sorts we have the cognitive and emotional capability to create much of what our futures hold in store for us. The corollary is that if we fail to do so humankind will self-select itself as being unfit in the evolutionary game of life.

The KM competency is the one competency that bears the responsibility of visually depicting the integration of the learnership social systems under consideration – the personal, organizational, community, and societal social systems plus the context setting global knowledge spheres that

cross-impact all the social systems. Figure 5-1 is an illustration of the KM competency super-imposed on the Learnership Integrated Systems Architecture (LISA) that has been taking shape since Chapter Two on Systems Thinking and Chapter Three on Pattern Recognition.

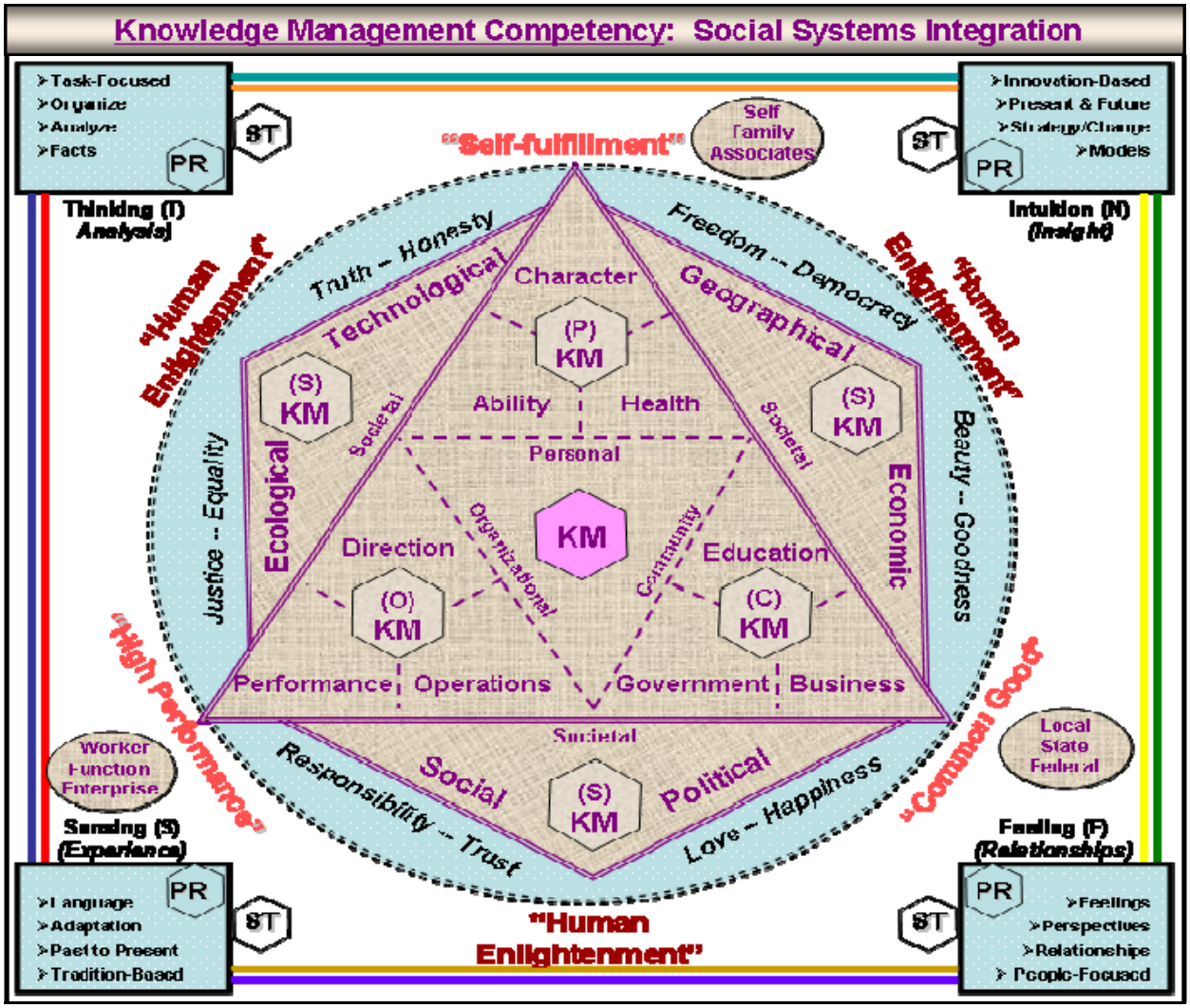

Figure 5-1

[Author's Note: The reader is encouraged to revisit the First Interlude immediately following Chapter One and the Second Interlude after Chapter Three in which the LISA framework begins to take shape.]

The KM social systems integration illustration has the following foundational features:

1. KM Knowledge Spheres – The six context setting global knowledge arenas with cross-impact on all levels of social system learning and development. These are the social, economic, political, ecological, technological, and territorial spheres of human participation and responsibility that overlay whatever system or structure we choose to use for understanding our joint human condition.

2. Personal KM – The use of KM for Personal (Micro) Systems Development (PSD) includes the three interdependent sub-processes of Character, Ability, and Health. An individual that knowledge-enables his or her Character, Ability, and/or Health sub-processes is in rapid pursuit of *self-fulfillment*.

3. Organizational KM – The use of KM for Organizational (Macro) Systems Development (OSD) includes the three interdependent sub-processes of Direction, Operations, and Performance. An organization that knowledge-enables its Direction, Operations, and/or Performance sub-processes is in rapid pursuit of *high performance*.

4. Community KM – The use of KM for Community (Mega) Systems Development (CSD) includes the three interdependent sub-processes of Education, Business, and Government. A community that knowledge-enables its Education, Business, and/or Government sub-processes is in rapid pursuit of the *common good*.

5. Societal KM – The use of KM for Societal (Meta) Systems Development (SSD) includes the combined, synergistic influence of the PSD, OSD, CSD and the KM knowledge spheres. Whenever progress is made by individuals, organizations, and/or communities society is enhanced and *human enlightenment* is advanced.

[Author's Note: Figure 5-1 visually describes the social system interdependencies that lead to the paradoxes, complexities, and uncertainty which we need to accommodate in our daily lives. The reader is reminded that a core premise of this book is that it is possible to organize and develop a framework for integrated social systems thinking and action using the knowledge being accumulated during our life journey. Having a cognitive mental model that reminds us of these relationships gives us the advantage of "choice" in how we engage the situations we experience.]

Knowledge Management Competency: Process, Practices, and Technologies

Knowledge management moves from theory to practice when procedures and methodologies are established to put it into service for people and organizations. Because KM inherits some of the knowledge and experience of previous organizational management practices and methodologies, it is accurate to state that KM is the practice of "knowledge-enhancing" or "knowledge-enabling" organizational functions or processes for better performance. The organizational improvement initiative requires a disciplined approach for integrating KM practices and technologies into the organization's design and workflow. And, the organization often employs project management techniques in which attention is given to the scope, schedule, and cost of accomplishing the required work. Figure 5-2 is a representation of the knowledge management competency's use of KM process, practices, and technologies:

KM Process. Knowledge associated with a particular organizational function or process is always at least partially unique to that discipline or subject. However, the methodology used to knowledge-enhance the function or process is a standard practice.

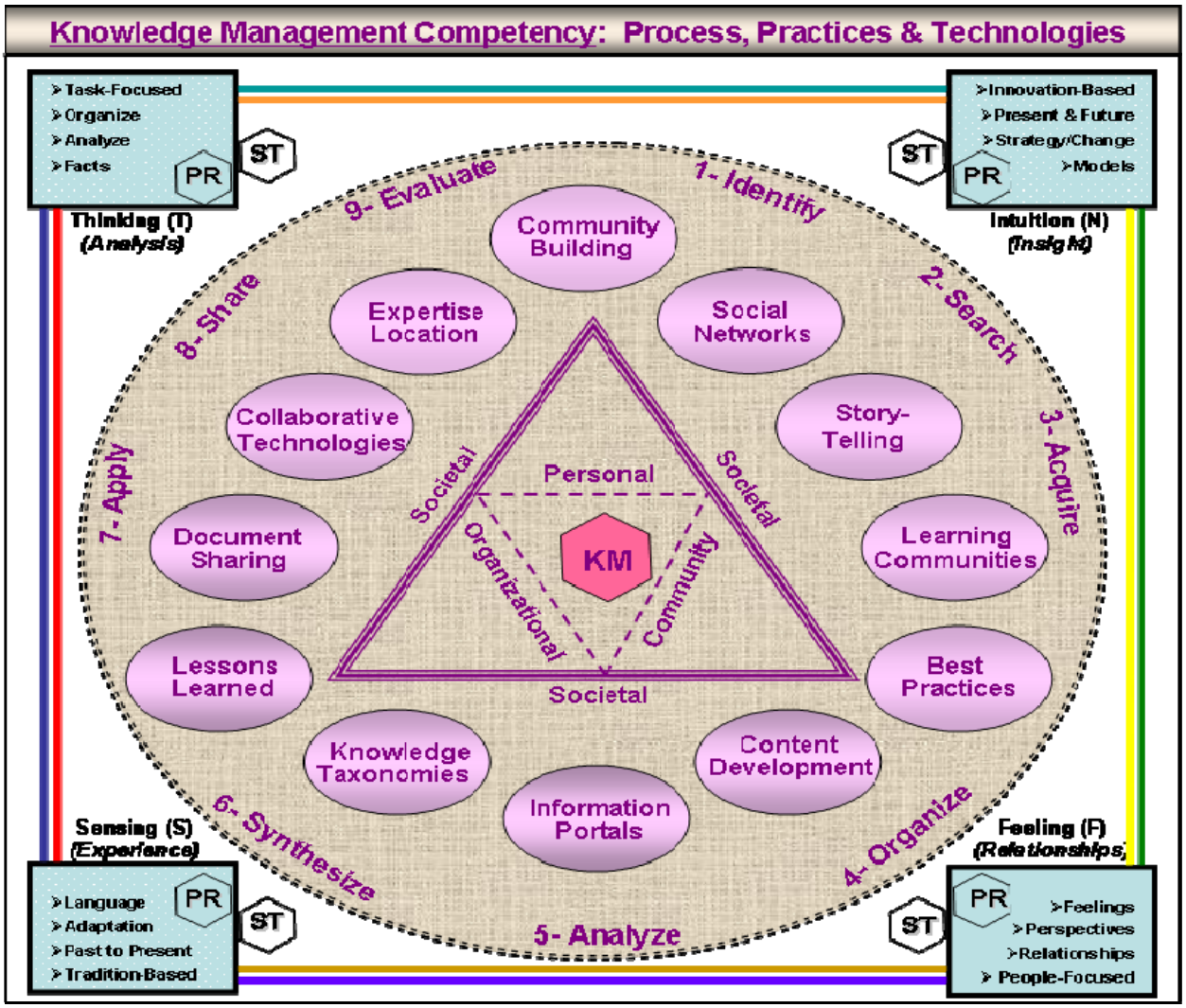

Figure 5-2

1. Identify – What information and knowledge is unique and essential?
2. Search – What are the best available sources for the information/knowledge?
3. Acquire – In what form can the information/knowledge be obtained?
4. Organize – How should the information/knowledge be prioritized and grouped?
5. Analyze – What can be learned by dissecting the information/knowledge?
6. Synthesize – What meaning can be projected by connecting disparate pieces of information/knowledge?
7. Apply – Where and how can the new knowledge be beneficially used?

8. Share – Are there others who could use the new knowledge?

9. Evaluate – Has the new knowledge been usefully applied?

KM Practices. The various ways in which individuals, groups, and organizations arrange to associate and communicate in an effort to acquire and share information and knowledge, and to build the trusted networks through which cooperation and collaboration occurs.

1. Community-Building – Bringing people together in electronic communities of interest or practice.

2. Social Networks – Tracking and building supportive interpersonal relationships.

3. Story-Telling – Using human interest situations to communicate information.

4. Learning Communities – Organizing communications and feedback around specific functions or areas of concern.

5. Best Practices – Acquiring and documenting highly effective techniques and methods of work.

6. Lessons Learned – Documenting, discussing and learning from past experience.

7. Expertise Location – Organizing and making available a locator of knowledgeable and skilled personnel.

KM Technologies. KM practices are supported through the application of information technology and electronic tools that connect people at virtual locations, and integrate and support their workflows with software applications unique to the functions supported.

1. Information Portals – Organization web-sites providing single-point-of-access to stores of related and integrated information and services.

2. Content Management – The management of web site contents, capabilities, and information presentation. Also applies to the management of information stores accessible from web sites.

3. Knowledge Taxonomies – The logical organization of information and knowledge concerning a subject, methodology, or organizational function.

4. Collaborative Technologies – Computer applications that enable synchronous (same time give and take) communications among two or more people.

5. Document Sharing – Database applications that allow the storage, access, updating, downloading, and tracking of electronic documents.

[Author's Note: New KM practices and technologies continue to emerge as organizations innovate and implement new ways to communicate, coordinate, and collaborate with their employees, customers, and suppliers. From an enterprise-wide perspective, business to business relationships, business to government relationships, and business to stakeholder relationships are increasingly important in the growing global economy. The value of KM practices and technologies seems to be unlimited.]

Conclusion

If you wish to know the road up the mountain,
ask the man who goes back and forth on it.
Zenrin

Knowledge Management Competency. Knowledge management is the fourth of five com–petencies believed to be essential to the learnership philosophy, architecture, and practitioner way of being. The first competency, *systems thinking*, laid a foundation for expanding our awareness of related and mutually dependent people, organizations, and communities when resolving issues, solving problems, and taking on other personal and social system challenges. *Pattern recognition*, (similar to Senge's mental models) was the second competency and asked us to look for and cognitively inquire into the beliefs, processes, methods, styles, and perspectives embedded in our own and others' thinking and behavior. This allows us to "read" people and situations far better than when we are oblivious to the impact of such interpersonal strategies. *Situational learning*, the third competency introduced the need to pay attention to the learning process and learning environment within which we participate. Proactive management of our respective learning cycles increases the quality and speed of learning and the resulting knowledge available for our use.

This chapter focused on the core reasoning competency, knowledge management, which draws heavily upon systems thinking, pattern recognition, and situational learning for its accuracy and appropriateness in effecting reliable decision making and social systems outcomes. It is useful to know that KM as a discipline has become reasonably well described, researched, and applied so that best practices are becoming available – thereby enabling the development and use of organizational improvement methodologies and technologies. In the context of this book, learnership practitioners are encouraged to develop the learning, knowing, and leading skills necessary to become the knowledge architects and workgroup facilitators that knowledge-enable people, organizations, and communities in the pursuit of their respective objectives.

Implications for Total Knowledge Management. The concept of TKM was introduced in Chapter One, has been developing through intermediary chapters, and has culminated here in Chapter Five with a full, but high level explanation. All of the reasoning competencies and knowledge management capabilities described and discussed are now available for leader use to in social systems development. Notwithstanding the fact that knowledge management has been primarily discussed as an organizational capability in most management literature; all the issues, practices, challenges, and techniques discussed herein apply as well to personal and community

social system development. Knowledge management is essentially a "personal" choice on how an individual chooses to learn and develop in the major domains of his or her life. Knowledge always needed to be managed and those who acquired knowledge and applied it well were generally better rewarded and more successful. This is now true more than ever, and the future belongs to those who step up to the challenges of lifelong learning and knowledge management. Learning organizations applying knowledge management practices and techniques are the wave of the future whether they are the bricks and mortar operations of today or the virtual, networked organizations of tomorrow. And, the learnership practitioners are individuals skilled in the use of TKM principles, practices, and technologies.

Personal Reflection. This topic appears at the send of each chapter and is meant to serve two purposes: (1) be a reader's guide to main points and "takeaways," and (2) to encourage everyone to take a moment to engage their mental cognition and intuition on what the chapter means to them – especially at this time in their lives. Questions for chapter reflection follow immediately below; and for those readers inclined to maintain a self-assessment, your thoughts may be recorded in your Learnership Journal for Life and Career Reflection and Renewal which is located at the epilogue.

Questions for Discussion:

1. Have you worked in an organization in which information essential for your position and responsibility were not readily available, and others who may have had the information and/or knowledgeable expertise were not known to you? Please explain the impact on you.

2. Are workers in your career field considered to be knowledge workers? If so, in what way? If not, how would their worked need to change to make them become knowledge workers?

3. What does the knowledge management competency have in common with the Learnership Integrated Systems Architecture (LISA) in Figure 5-1?

4. Can you list two to three major learning points from this chapter that you want to keep in mind to improve your ability to manage your life and career?

5. What do you think the impact of this chapter's information might be on the personal, organizational, community, and/or societal systems to be discussed later in the book?

6. Can you identify two to three topics, models, or perspectives in this chapter you would like to learn more about?

7. Should you be making an entry into your learnership journal at this time?

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