F1
SCHOOLS OF THOUGHT IN KM 1: Overview

Knowledge management (KM) is a new discipline but already its practitioners belong to competing schools of thought. Like a tree, it has grown and several distinct branches are visible. Through this Section F, I will walk you through some of the schools of thought in KM, starting with this overview.

1 – **Intellectual Capital**

KM as a distinctly new discipline began to take shape in the late 1980s when Swedish practitioners like Karl-Erik Sveiby and later Leif Edvinsson noted the inadequacy of traditional measures of corporate assets. They recognized early the importance of "intellectual capital" and its measurement. It has led to continuing attempts to reinvent accounting such as the work of Baruch Lev of NYU.

In early 1990s, Fortune editor Thomas Stewart started to write about intellectual capital. Hubert St. Onge later added the concept of **customer capital** as another component of invisible assets of corporations.

One argument for intellectual capital is the fact that human creativity produces innovation which when commercialized creates value. IC pioneers Patrick Sullivan and Gordon Petrash joined Edvinsson and others to form themselves into the Intellectual Capital Movement or ICM Gathering. Their main concern is how to manage invisible knowledge assets for creating value.

Other authors are close to this school of thinking: Nick Bontis of McMaster University, David Teece of UC Berkeley and David Klein of Harvard. By the way, I don't think it is mere accident that some dimensions in Norton and Kaplan's Balanced Scorecard are quite close to the three components of intellectual capital delineated by the ICM Group.

2 – **Organizational Learning**

From the fields of systems dynamics and organizational behavior, another group in the Boston area gathered in mid-1980s around the concept of organizational learning. The group – which included Peter Senge of MIT, Arie de Geus of Royal Dutch Shell, and Chris Argyris of Harvard – formalized itself in 1989 as the Center for Organizational Learning. In 1995 this became what is now the Society for Organizational Learning.

Christ Argyris is known for his work about organizational defenses that block learning and how to unravel them by surfacing assumptions and mental models. Peter Senge became famous for his "The Fifth Discipline" where he showed that organizations behave the way they do because of how people think and relate to one another.

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William Isaacs from Oxford brought in the behavioral tools in creative **dialogue**, which is related to the process of **team learning**, one of Senge's five disciplines. Isaacs, in turn, borrowed from the seminal works of physicist David Bohm about true dialogue. Bohm argues that many social problems today show that people basically do not know how to talk and think together.

Far from New England, Daniel Yankelovich of the UC San Diego is another fine writer about dialogue that brings his wide personal experiences in various applications.
In a 1993 article and a 2000 book, David Garvin of Harvard Business School argued for a more practical approach to organizational learning, one that is more linked with business results. I view his perspective as complementary to Senge's and bridging organizational learning with the rest of the KM tree.

3 – **Knowledge Transfer**

There is a large disparate group of KM practitioners and writers who advocate a common theme: the effective transfer of knowledge within organizations. Many of them have broad views of KM, but the common thread that runs through their writings is the use of systematic tools for managing the **knowledge cycle**, namely, from sourcing/capturing, organizing/storing/retrieving, sharing/transferring to using/reusing knowledge.

Advocates of benchmarking, **transfer of best practices**, codification of **work templates** and optimum use of company Intranets belong to this wide group. Experts from engineering and ICT backgrounds, I suspect, tend to gravitate to this school of thought. Generally, their main concern is alignment of KM with business goals and results.

Among the leading lights in this group include Carla O'Dell of the American Productivity and Quality Center, CEO Robert Buckman of Buckman Laboratories, Nancy Dixon of George Washington University, Andersen's Thomas Davenport and IBM's Laurence Prusak.

4 – **Knowledge Innovation**

Some KM practitioners believe that creating knowledge and providing the environment or means to encourage innovation in a group are more important than managing what is often explicit or codified knowledge. This school of KM thought see the crucial first steps in innovation as basically tacit and human processes that require different perspectives and methods.

The leading exponents of this school are Ikujiro Nonaka of Hitotsubashi University and UC Berkeley, Georg von Krogh of University of St. Gallen in Switzerland, Dorothy Leonard of Harvard Business School, Debra Amidon of Entovation International, and David Snowden of IBM Institute of Knowledge Management.

Very interesting is their attention to tacit processes and subtleties in human relationships crucial in fostering creativity. Leonard talks of “creative abrasion”. Nonaka describes “ba” (Nippongo for shared interpersonal space) among Japanese innovation teams. David Snowden of IBM Institute of Knowledge Management proposes a “cynefin” (Welsh for one’s affinity to a place) model for understanding the tacit cultural underpinnings of knowledge processes; he has contributed much in developing the art of storytelling as part of KM. Von Krogh observes how a “caring” organizational culture nurtures technological innovation. And Etienne Wenger showed how invisible informal social processes actually do facilitate knowledge sharing in real-life communities of practice.

In trying to picture the entire “KM tree”, I left out many small branches and very likely failed to do justice to the large ones. Besides, the branches are still growing and branching at different rates. Competition between branches and twigs are at times getting unprofessional and ugly (e.g. calling themselves “post-Nonaka”). The “KM tree” is vigorous and growing, and it is likely we do not yet know how the final “KM tree” will look like. More details will be covered in the next chapters.

F2
SCHOOLS OF THOUGHT IN KM 2: Intellectual Capital

There is no consensus as to who is the "father of knowledge management" but if I am asked to nominate, I will suggest Karl-Erik Sveiby from Sweden.

In 1979, Sveiby and some partners bought a small business weekly called Affärsvärlden and turned it into one of Scandinavia's largest specialist publishing groups, E+T Frlag. From 10 people in 1979 it grew to 160 people when it was sold in 1994.

According to Sveiby, in 1979 he came from a brick-and-mortar company, Unilever, and he

> *"still believed that 'real' companies had formal structures, that managers were in control and output was visible, and that the balance sheet gave a reasonable accurate account of the value of business."*

But the company he went into *"had no organization"*. Their core competence was *"editorial content and* [they] *outsourced everything else."* They had *"no visible production* – [they] *wrote in one city and the journal was printed in another…* [They] *had no real assets… and the brand name of the journal was valued in the accounts at a nominal one Swedish kronor."* ("The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets" by Karl Erik Sveiby, Berrett-Koehler Publishers, 1997).

> *"But we did have one thing: substantial invisible knowledge-based assets, including some of Sweden's best financial analysts, a well-known brand, and a large network of friends and well-wishers in the business community.*
>
> *"… I discovered that the conceptual tools that I had acquired in my earlier career were useless, I decided to start again with a blank sheet of paper"*

I must capture accurately Sveiby's story of how he had to change his mindset by quoting him extensively:

> *"I began to realize that what distinguished… people [who lead companies with little tangible assets] most clearly from their counterparts in manufacturing firms was their different perception of their businesses. They took little notice of the financials and were more concerned about their people, their networks, and their image.*
>
> *"… By freeing themselves from the mental straitjackets of the industrial age, some of these pioneer managers have found, seemingly by accident sometimes, a wellspring of limitless resources arising from the infinite human ability to create knowledge and from the convenient fact that, unlike conventional assets, knowledge grows when it is shared."*

When a small but successful unlisted knowledge-based company happens to be bought, its owners and managers are most pleasantly surprised to discover how much their company is worth.

In July 1992, I accepted an appointment by President Fidel V. Ramos to join his government. I was, according to government rules, obliged to divest my business interests. I was partner in a successful consultancy firm run by CEO Bobby de Guzman, which was at that time undergoing due diligence processes in favor of a U.S.-based firm seriously interested in acquiring our company to quickly obtain a presence in the local market.

I was happily surprised shortly thereafter when Bobby handed me a handsome check – representing many times my investment about 2-3 of years ago.
"What! Our company is worth THAT much?"

My "surprise" was a clear symptom of what Sveiby calls a "mental straitjacket" that views the worth of a company in terms only or mostly of tangible assets.

We do not see the intangible assets. We might as well call them invisible – a good demonstration of a principle I keep harping in this book: a wrong mental model makes its owner blind to certain things! And as scientific practitioners say, a mental model is "wrong" if it does not pass a reality check.

Here are examples of reality checks: market-to-book ratio of Yahoo two years ago was 88:1. America Online was 194:1. The average market-to-book ratio of Dow Jones companies (across ALL sectors including manufacturing) five years ago was more than 5:1.

Since Sveiby wrote the seminal book "The Know-How Company" (1986), a number of his colleagues had formed themselves into a group called the Intellectual Capital Movement Group. They hold that intangible knowledge assets must be recognized, measured and managed to create value.

Among the members of the IC school of thought are:

- Leif Edvinsson, Associate Professor of Intellectual Capital, University of Lund, Sweden. As the first Director of Intellectual Capital of Skandia, he pioneered the measurement of intellectual capital and the world's first corporate IC Annual Report.
- David Teece, Professor of International Business and Finance, University of California Berkeley, wrote the book "Managing Intellectual Capital" (Oxford University Press, 2000). As early as 1986 he studied commercialization of technological innovations.
- Hubert St. Onge, CEO of Konverge Digital Solutions, first introduced the concept of "customer capital" (others call it "stakeholder capital" or "external capital") as one of the three components of intellectual capital.
- Patrick Sullivan, one of the founders of the ICM Group, focuses on how to create value from intellectual assets. He wrote "Value-Driven

Intellectual Capital: How to Convert Intangible Corporate Assets into Market Value" (John Wiley, 2000).
- Baruch Lev is Professor of Accounting and Finance at New York University Stern School of Business. He is Director of the Project for Research on Intangibles.
- Thomas Stewart is member of the Board of Editors of Fortune magazine. He wrote the popular and must-read book "Intellectual Capital: The New Wealth of Organizations" (Doubleday, 1997).

Sveiby is now based in Australia, where he is Professor at Macquarie Graduate School of Business in Sydney.

F3
SCHOOLS OF THOUGHT IN KM 3: Knowledge Transfer

Mainline thinking in knowledge management (KM) is focused on the bottom line. The main concern of this large school of KM thinking is knowledge transfer for enhancing performance, quality and productivity.

Productivity is the keyword.

Case studies from 1994 to 1998 conducted by the American Productivity and Quality Center (APQC) show that internal (that is, within a firm) transfer of knowledge and best practices clearly results in higher productivity. Four out of five companies they surveyed are engaged in internal transfer of best practices – the most popular KM tool. APQC President Carla O'Dell and Chairman C. Jackson Grayson, Jr. are the noted champions of this KM practice ("If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice", Free Press, 1998).

This KM tool works because wider adoption of a best practice generally increases productivity of most adopters. The principle here is: transfer and reuse of knowledge creates value. But the problems, according to a 1994 APQC study by Gabriel Szulanski of Wharton, are:

- Companies are not always aware they possess useful knowledge. Former Texas Instruments (TI) CEO Jerry Junkins remarked, "if TI only know what TI knows."
- If they do, potential receivers or adopters may not be able, for one reason or another, to absorb or reuse knowledge.
- A barrier to transfer is the lack of connection or relationship between the source and recipient within the same firm.
- In-house transfer of best practice took an average of 27 months.

Nancy Dixon ("Common Knowledge: How Companies Thrive by Sharing What They Know", Harvard Business School Press, 2000) observed that firms engage in different kinds of knowledge transfer depending on the nature of the task (frequent or nonroutine), kind of knowledge (tacit or explicit) and similarity of context between source and receiver.

Transfer of best practice is not new in the Philippine. For example, the Philippine Society for Quality has been engaged in benchmarking and sharing of best practices across firms. What practitioners may not realize is that they are using a KM tool. In fact the National Quality Forum sponsored by PSQ on October 14-17 this year adopts as its theme "Winning in the Quality Century through Knowledge Management."

In this KM school of thought, concern is about managing knowledge at various stages of the knowledge cycle:

- Internal/external sensing
- Creation, sourcing or capture
- Codification, organization, storage and retrieval
- Sharing, applying, using/reusing

The perspective, you may notice, of the knowledge cycle is a rather linear, production-oriented but systematic one. It begins with internal and external sensing, which includes competitive intelligence (CI). In Australia, KM and CI are combined in one professional organization, the Society of Knowledge and Competitive Intelligence Practitioners Australasia (SCIPAUST). It ends with using or reusing knowledge: the stage where value is created.

However, I add two stages: (a) facilitating, motivating and synergizing, and (b) tracking and measuring, to complete the cycle.

KM practitioners coming from engineering, business, systems analysis or information technology backgrounds tend to gravitate towards this perspective. There is a tendency to see knowledge as "objects" that can and should be efficiently deployed. Karl Erik Sveiby calls this school of thought the "IT track" in KM, versus what he calls the "people track" in KM. The "people track" to me definitely includes the organizational learning school of thought (the topic of the next chapter) and the knowledge creation school (the topic of the chapter after next).

Practitioners whose expertise lies in the overlap between KM and information management (intranets, role-based corporate portals, electronic performance support systems, computer-assisted collaborative work, intelligent search engines, decision support systems, etc.) belong to the "IT track". It is easy to see why in this school belongs probably the most number of KM practitioners.

Their concern is systematic, efficient and effective codification, taxonomy, organization, storage and retrieval of knowledge, as well as the infrastructure and processes for those steps.

May I recommend a useful book to read in KM: "Working Knowledge: How Organizations Manage What They Know" by Thomas Davenport and Laurence Prusak (Harvard Business School Press, 1998). "Learning to Fly: Practical Lessons from one of the World's Leading Knowledge Companies" by Chris Collison and Geoff Parcell describes the successful knowledge transfer practices of British Petroleum. For more specific approaches consult the subsections on collection, codification and transfer of knowledge in the annual "Knowledge Management Yearbook" edited by James Cortada and John Woods.

F4
SCHOOLS OF THOUGHT IN KM 4: Organizational Learning

Organizational learning and knowledge management are two related management fields. They overlap in the difficult but challenging human dimensions affecting how knowledge is acquired in a group context.

Many authors had earlier written about organizational learning, such as Chris Argyris, Donald Schon, Robert Hayes and Steven Wheelwright. However, after Peter Senge wrote his famous book "The Fifth Discipline: the Art and Practice of Learning Organizations" (1990), his name had become associated with organizational learning.

The distinctive elements of Prof. Senge's approach are as follows.

- Learning requires awareness of one's assumptions or **mental models**. In his words, "The central message of the Fifth Discipline is… that our organizations work the way they work, ultimately, because of how we think and how we interact."
- Behavior of organizations can be understood better using **systems thinking**. Senge is from the Massachusetts Institute of Technology (MIT) Sloan School of Management. He was influenced by the MIT systems dynamics group that became famous with the global systems models used by the Club of Rome ("Limits to Growth", New American Library, 1972).
- Learning in a group context requires members to make explicit their unexpressed thoughts ("left hand column"), mental models and **ladders of inference**. "If we cannot express our assumptions explicitly in ways that others can understand and build upon, there can be no larger process of testing those assumptions and building public (group) knowledge," aptly underlines the dynamics of team learning by Senge.

Senge was probably influenced by colleagues Prof. Donald Schon (urban studies and education) and Prof. Chris Argyris (education and organizational behavior) both from nearby Harvard University.

Schon studied how experts learn from practice, and how to train professionals to be competent in practice ("The Reflective Practitioner", Basic Books, 1984; "Educating the Reflective Practitioner", Jossey-Bass, 1987). Chris Argyris studied the factors that block organizational learning (for example, "Overcoming Organizational Defenses: Facilitating Organizational Learning", Prentice Hall, 1990). Since the 1970s, the two had collaborated to develop "action science" which looks at the difference between espoused values and values that actually underlie action ("Organizational Learning: a Theory of Action Perspective", Addison-Wesley, 1978).

A central idea in their thinking is the importance of often unconscious "mental models" that affect how people behave and make decisions – one of the five disciplines Senge advocates.

An associate of Senge in the MIT Sloan School of Management is William Isaacs ("Dialogue: the Art of Thinking Together", Doubleday, 1999). Isaacs headed the MIT Dialog Project, studying how teams effectively inquire and decide together. He was influenced by physicist David Bohm who believed that many social problems are made worse by people's basic inability to communicate effectively. Team learning, one of Senge's five disciplines, borrowed from the works of Isaacs and Bohm.

One of the criticisms of Senge comes from nearby Harvard Business School. Prof. David Garvin notes that scholars' *"discussions of learning organizations have often been reverential and utopian… These descriptions… lack a framework for action, and thus provide little comfort to practical-minded managers."* ("Learning in Action: a Guide to Putting the Learning Organization to Work", Harvard Business School Press, 2000)

While Senge, Argyris and Schon looked at inner or psychological factors that facilitate or block learning, Garvin focused on systematizing procedure applied over the stages (acquiring, interpreting and applying) and types of learning (sensing/observation or intelligence gathering, practice or experience, and experimentation). Garvin, by complementing Senge, fittingly creates a useful bridge between organizational learning and mainstream knowledge management. More practitioners are moving towards the application of "learning in action" concepts in workplaces. **Learning in action** entails procedures that transform every action in the workplace into learning processes.

One of the casebooks published by the American Society for Training and Development (ASTD) is "Leading Knowledge Management and Learning" (ASTD, 2000). Its seventeen case studies illustrate actual experiences and experiments in organizational learning. They show that many organizations are engaged in developing their own ways of installing "learning in action" programs. Here are some examples:

- BP Amoco: installation of a continuous learning system based on the Deming learning cycle, adoption of the "retrospect" or a process of structured questioning and dialogue process to document a team's learning for future re-use, and establishment of a lessons-learned website.
- Equiva Services (jointly owned by Shell, Texaco and Saudi Refining): "action learning" where executives go through three learning steps: observe and gather intelligence; retreat and reflect to compare notes, analyze and synergize their collective knowledge; and decide and act. A chief learning officer (CLO) is appointed to facilitate the identification and transfer of knowledge across organizational units.
- Trauma Department, Lancaster General Hospital, Pennsylvania: a systematic knowledge needs identification/transfer and face-to-face

mentoring on treatment of spinal cord injury patients from a team from Thomas Jefferson University Hospital.

- Seven elementary and middle schools in Alabama whose principals were identified as "best practitioners" in leading organizational learning: their best practices include: replacing top-down decision making with collaborative team learning, shifting from compliance of rules to innovation and creativity, shifting operations to be customer focused, facilitating two-way sharing of knowledge, cultivating mutual trust as driver of work relationships.
- IBM's Knowledge and Differentiation Programme: use of storytelling to build self-sustaining ecologies that facilitate the natural flow of knowledge between formal and informal communities within the organization.

These organizations show how working is learning, and learning is working.

F5
SCHOOLS OF THOUGHT IN KM 5: Knowledge Innovation

A school of knowledge management (KM) practitioners holds that knowledge innovation should engage the attention of corporate and national decision makers. They hold that innovation leads to productivity improvements or completely new and better products, and that innovation often spawns new enterprises and new market niches. Creating new knowledge is more essential than managing whatever knowledge is there.

Some shy away from using "knowledge management" because strictly speaking only codified knowledge or "knowledge objects" can be managed.

Managing existing knowledge does result in productivity gains but such gains are merely incremental. Quantum leaps in productivity require knowledge innovation. Willie Pietersen illustrates this with the growth of Olympic high-jump records from 1900 to 1980 ("Reinventing Strategy: Using Strategic Learning to Create and Sustain Breakthrough Performance", John Wiley, 2002). In the early 1900s, high-jump records were inching slowly upwards past 6 feet. Olympic high jumpers were using the "scissors" technique. Then in the 1920s a new technique, the "Western roll" was developed that allow high jumpers to reach beyond 6 ½ feet. New knowledge resulted in a quantum leap.

Records again slowly inched up thereafter but could not reach beyond 7 feet. Another new technique, the "straddle" had to be invented in 1955 to enable Olympic high jumpers to consistently clear 7 feet. Nobody dreamed of clearing 8 feet until Dick Fosbury invented the "Fosbury Flop" – a back-first jump that often means landing on your head and sometimes breaking your neck (the reason why for a time UK prohibited the Fosbury Flop). It was so radical and awkward that at first Fosbury got "mostly hoot and holler" from the crowd. But it works! Take note: knowledge managers define "knowledge" as capacity for effective action, which encompasses information useful for effective action, i.e. knowledge is anything that works.

For 20 years now, no Olympic high jumper who uses the old "straddle" technique has won the gold medal.

Look at the numerous innovations that surround you at home, in the office and all places in between. Each one of those innovations first started as a tacit idea in the mind of someone. Take note again: knowledge creation always begins as a tacit process. This is another reason some KM practitioners argue that the term "knowledge management" is inappropriate in dealing with innovation.

The Japanese admittedly has the longest experience in the subtle art of "managing" the tacit stages of the knowledge innovation process. A good description of several cases involving firms like Sony, Matsushita, Toshiba, Shiseido, Maekwa Seisakujo and Honda can be found in a 1995 book written by

Ikujiro Nonaka et al. ("The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation", Oxford University Press) and in another book he co-authored with Swiss Professor Georg von Krogh ("Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation", Oxford University Press, 2000).

For hundreds of years before modern industry and technology started in Britain, Japan had developed an institution for knowledge creation and transmission, the "iemoto". Teaching and learning in iemotos are largely tacit processes from master to pupils. Iemotos for various arts ("geido") such as tea ceremony (chado), aikido, kendo (swordplay using wood), kohdo (way of incense), ikebana, kabuki and shodo (calligraphy). The word ending "-do" in Japanese means "way" or "practice". Take note again: knowledge is about know-how or practice, in contrast to information which is know-what.

Another proponent of the knowledge innovation school, and a colleague of Nonaka, looks forward into the future: American entrepreneur-innovator Debra Amidon. Amidon advocates the practically limitless potential of ICT-enabled networks to create, synergize and apply knowledge across all sorts of global boundaries. She set up Entovation (from ENTerprise innoVATION) International – a nested network of KM practitioners from 90 countries – to demonstrate how a global "innovation superhighway" can tap this potential.

Interestingly, some of the members of Entovation belong to other KM schools of thought. Among them are luminaries mentioned in Section F of this book on "Schools of Thought": Karl-Erik Sveiby, Ikujiro Nonaka, Leif Edvinsson, Baruch Lev and Hubert St. Onge. Other KM practitioners and authors in this global KM network are: Karl Wiig, David Skyrme and Edna Pasher.

According to Amidon, Entovation illustrates *"not a value chain of activities, but as a system dynamic… in which intellectual capital, reputation, learning and client success continuously feed (and are fed by) progress in building access, credibility and competency… Everyone – individuals, enterprises and nations – learns from the innovations of one another. Collaboration among parties is essential and collective wisdom is the only way to create new standards, rather than simply following best practices."* Note the key idea: ICT-enabled **knowledge synergy**.

Other distinguishing features of this school of thought are:

- Attention to "ecology": appropriate organizational contexts or working environments that facilitate or encourage innovation, improvement and improvisation;
- Importance given to "sensing": capabilities for correctly seeing and interpreting external and internal events, and for arriving at fresh insights that may alter business strategy;
- Commitment to "learning": nurturing competencies, processes and cultures for continuous exploration, discovery and experimentation throughout the organization;

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- "People oriented": management attitudes and competencies for motivating people to act their best.

To close Section F of this book, may I recommend the following: Philip Sadler's "Managing Talent" (Economist Books, 1993), Dorothy Leonard's "Wellsprings of Knowledge" (Harvard Business School Press, 1998), Andy Law's "Creative Company" (John Wiley, 1998), and Matthew Kiernan's "Get Innovative or Get Dead!" (Business Information Books).