

99 PARADIGM SHIFTS

FOR SURVIVAL IN THE
KNOWLEDGE ECONOMY

A KNOWLEDGE MANAGEMENT READER

SERAFIN D. TALISAYON
CCLFI . PHILIPPINES



Preface

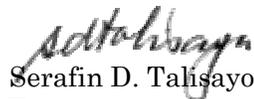
If we are to survive and excel in the emerging knowledge economy, we need to exercise new ways of looking at how the world works. We need new eyes. We need to discover our blindfolds.

The purpose of this book is to help you see your own assumptions, and how they affect how you see the world. The moment you are aware of the mental box you are in, you have the conscious choice to remain in the box, to change the box into something larger, or to get out of the box. This is conscious paradigm shift.

Awareness endows you with the power of choice to adopt a new framework, a new paradigm to see the world afresh. New decision patterns follow after being able to see what you did not see before. Ms. Babes Afable, Managing Director of CCLFI.Philippines, summarizes the process as: ***awareness → choice → change***. Her perspectives in conscious living and learning have been an influence behind the thinking and writing of this book.

The book is conveniently divided into short bite-size chapters you can read in a few minutes. To some extent, the chapters can stand alone; you need not read chapters sequentially. Use the Contents to select topics that attract your attention. Read a chapter and set it aside to let what you read sink in. Short phrases to capture the new ways of seeing are printed in pink boxes by the page margins.

I welcome feedback, comments and reactions. In the next revision of this book, I will be glad to acknowledge readers, colleagues and fellow practitioners who send in feedback and to thank them for helping improve this work.



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*A non-stock non-profit organization dedicated to helping organizations and communities make a difference, through personal and organizational learning and change, including knowledge and energy management.

About the Author

Dr. Serafin D. Talisayon, who many call by his nickname “Apin,” is a co-founder and the Vice-Chairman of the Knowledge Management Association of the Philippines. He is Chief Expert in Knowledge Management for the Asian Productivity Organization.



As a knowledge management practitioner and advisor, he has been engaged by international development institutions such as the World Bank Manila Office, Asian Development Bank, UN Development Programme, Internal Institute for Rural Reconstruction, Streams of Knowledge (a Global Coalition of Resource Centers in Water and Sanitation) and the World Health Organization Western Pacific Regional Office. He helped the House of Representatives (the Lower House of the Philippine Congress) and the Department of Health to formulate their knowledge management strategies and train their in-house team of KM champions.

He piloted *Team Learning* for the Shell Malampaya Multipartite Monitoring Team, for the Philippine National Oil Company’s Values in Action Council, and for United Laboratories; trained personnel of the Davao City Chamber of Commerce and Industry in *Business Process Innovation* and *Knowledge Management Audit*; developed *Best Practitioner Vignettes* as a necessary complement to best practice manualization for the UNDP Small Grants Programme; and introduced *Knowledge Management Games* for the Asian Development Bank. He is currently developing various KM measuring instruments for the Asian Productivity Organization.

He has designed and developed courses, both on-line and face-to-face, in knowledge management for the Personnel Management Association of the Philippines, Center for Knowledge Management of the Development Academy of the Philippines and the League of Cities of the Philippines’ CDS Project. As a professor at the University of the Philippines in Diliman, he was the first to introduce and teach a graduate course in knowledge management, which he implements through a combination of classroom instruction, web-based learning and practicum in their actual workplaces.

In 1999 he co-founded a non-government organization, CCLFI.Philippines, to help organizations and communities in personal and organizational learning and change and to develop tools in organizational learning, knowledge management and energy management.

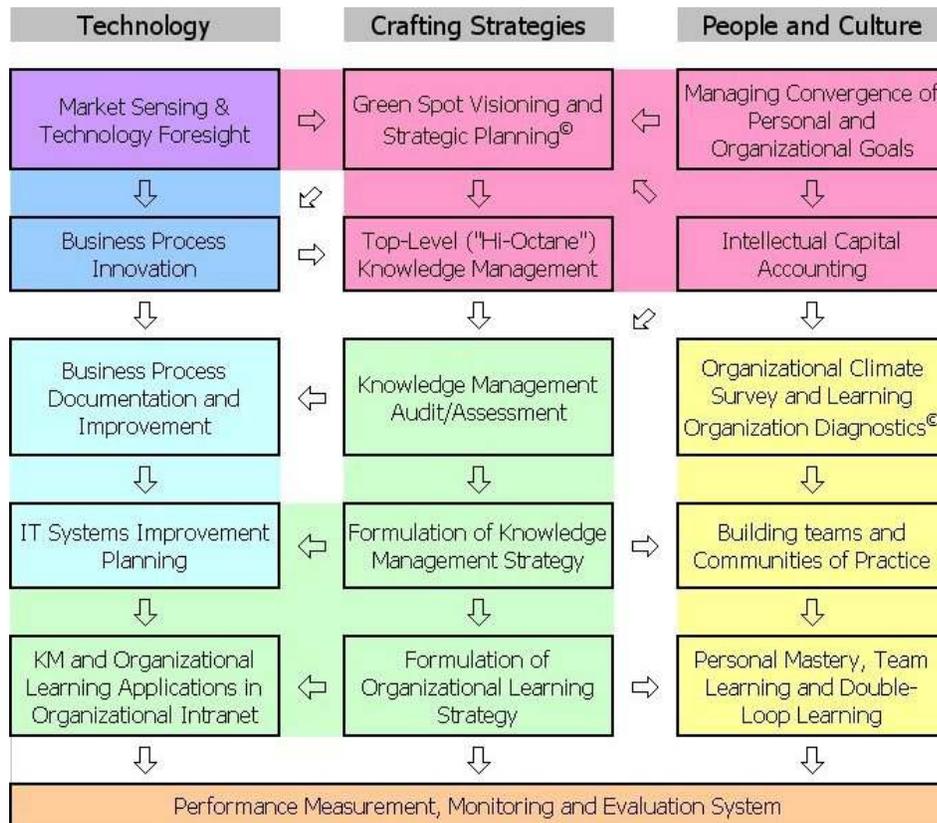


About the CCLFI.Philippines
“Managing human processes for creating intangibles”

In the emerging global knowledge era, creating economic and social value now depends more on **intangible** than on tangible assets:

- Market-to-book ratios now average 5:1 among U.S. companies
- Gross domestic product of most national economies is now produced more by the service sector than by the industrial and agricultural sectors
- In organizations, ratio of tacit-to-explicit knowledge is about 95:5.
- The knowledge content of products and services is increasing

The CCLFI.Philippines has been dedicated to developing tools and providing products/services for **managing human processes for creating intangibles**.



In 1999, several believers and practitioners of conscious personal learning/change came together to conceive and organize the CCLFI.Philippines, a non-stock non-profit organization registered with the Securities and Exchange Commission. The Center evolved from coaching individuals to helping organizations and communities make a difference through its products and services in **organizational learning/change** including **knowledge management**.

Among the organizations the CCLFI.Philippines has helped or is helping are:

- Asian Development Bank
- UNDP GEF Small Grants Programme
- Philippine National Oil Company – Energy Development Corp
- DOST Philippine Council for Advanced Science and Technology R&D
 - De La Salle – Dasmariñas campus
 - Partido Kalikasan
- Asian Social Institute
- Palawan Council for Sustainable Development
- Christian Children’s Fund – Philippine Office
- Polytechnic University of the Philippines
 - Don Bosco College of Engineering and Information Technology
- PanAsia thru Galing Pook Foundation
- Career Executive Service Board
- National Historical Institute
- Malampaya Multipartite Monitoring Team
- Foundation for Philippine Environment thru Bohol Marine Triangle Project
 - DOST Philippine Council for Advanced Science & Technology R&D
 - World Health Organization thru the Department of Health
 - League of Cities of the Philippines CDS Project
- STREAMS: Global Coalition of Resource Centers for Water and Sanitation
 - Philippine NGO Support Program
 - Literacy Coordinating Council
 - Philippines-Australia HRD Facility
 - United Laboratories
 - Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
 - International Institute for Rural Reconstruction
- National Water Resources Board
- Baganuur Joint Stock Company, Mongolia
 - Integrated Learning Systems
 - Philippine Business for Social Progress

DONATIONS ARE WELCOME: If you enjoyed or benefited from this book, your donation of any amount to the Center – a non-stock, non-profit organization – is welcome. You can deposit it to any Equitable PCIB branch to the account of CENTER FOR CONSCIOUS LIVING FOUNDATION Account number 0278-06648-7 and inform me that you have done so by emailing me at serafintalisayon@gmail.com so that the Center can properly acknowledge your kindness.

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A1

WHAT IS KNOWLEDGE MANAGEMENT?

1. Fundamental changes are sweeping through the global economy.

Firstly, GDP of most national economies has been shifting towards the service sector – a knowledge-intensive sector. If the agricultural revolution about 30,000 years ago was the “first wave” and the industrial revolution about 300 years ago was the “second wave”, a “third wave” had started about 30 years ago – the Information or Knowledge Revolution.

Pope John Paul II captured the essence of these global changes succinctly:

“Whereas at one time the decisive factor of production was the land, and later capital, today the decisive factor is increasingly man himself, that is, his knowledge.”

Wars were won and lost through industrial power. The nature of conflict is itself changing. Although he was a military officer, former Philippine President Fidel V. Ramos sensed the changes when he said:

1 — The global economic mix is shifting to services.

“The most important wars of the 21st century will be fought no longer on the physical battlefield, but in corporate boardrooms, laboratories, stock exchanges, classrooms, and shop floors.”

At the firm level, fundamental changes are also going on.

The Intangibles Research Project by New York University and Brookings Institute, as reported by Patrick H. Sullivan in “Value-Driven Intellectual Capital” (2000) found that since 1978, the assets of non-financial corporations had shifted towards intangibles:

Year	Tangibles : Intangibles Ratio
1978	80:20
1988	45:55
1998	30:70

In 1995, the market-to-book ratio of the 500 firms in the Standard and Poor index was 3.83 and in 1997, the ratio for Dow Jones index companies was 5.3. The ratio often exceeded 10 for Internet-based companies.

In 2000 in the Philippines, some market-to-book ratios were (note that ratios for companies selling knowledge-based services are bigger than those selling commodities):

Corporation	Market-to-book ratio
ABS-CBN	3.9
Globe Telecom	3.8
BPI	3.0
PLDT	2.5
Ayala Corp.	2.4
Jollibee Foods	1.8
San Miguel Corp.	1.6

S. L. Mintz writing at CFO Magazine (February 2000) summarized what is going on:

“Increasingly, intangible knowledge assets are dwarfing the value of tangible book assets at many companies.”

The emerging consensus is that the wealth of corporations consists more and more of intangible assets, namely knowledge assets. Conversely, what is seen and measured by traditional accounting (book value or tangible assets) is less and less of market value of corporations. However, market-to-book ratio must not be over-interpreted because market psychology, and at times stock market manipulation, is a big factor affecting market values.

2 — Intangible assets had exceeded tangible assets in many firms.

A rule-of-thumb is: once your market value exceeds twice your book value, you must seriously consider managing your knowledge assets.

That this measurement and management gap is serious can be gathered from rather strong statements such as:

“For Internet companies, there is hardly any relationship at all between book value and market value. Accounting may perhaps be the world’s second oldest profession, but its survival may well be at stake, if this trend continues.”

— Claes Fornell, Donald Cook Professor of Business,
 University of Michigan

“The accounting system doesn’t capture anything, really.”

—Judy Lewent
 Chief Financial Officer, Merck

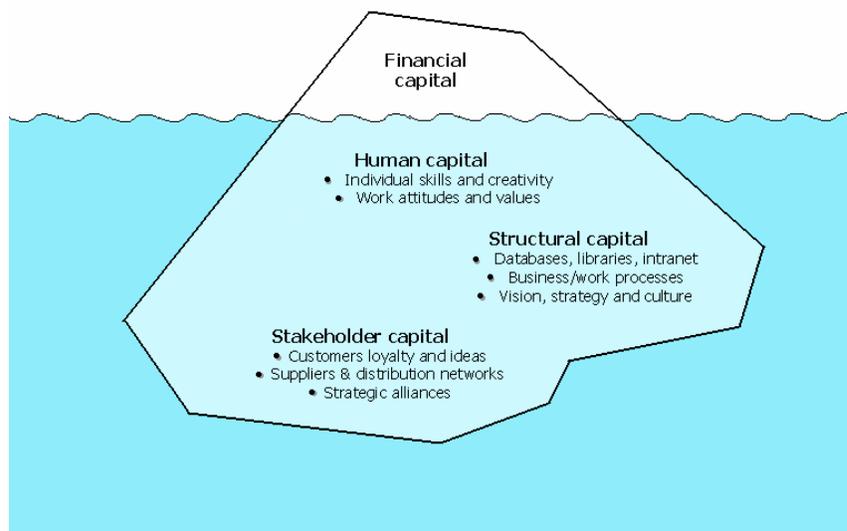
“...Coming out of the change in our economy from one that is industrial-based to one that is knowledge-based, where intellectual property, soft assets, and other intangibles increasingly make up the bulk of the asset base for wealth production in our society... we must learn to better measure and account for these assets, and reflect that in the financial reports of corporations.”

— Commissioner Steven Wallman
US Securities and Exchange Commission

2. Definitions

The consensus among knowledge managers is that the intangible assets are largely knowledge assets or intellectual capital, which consists of three components (see figure below):

1. Human capital or the knowledge that leaves company premises at 6 o'clock in the evening.
2. Structural capital (sometimes called process capital or internal capital) or the knowledge that is left behind in company premises at 6 o'clock in the evening.
3. Stakeholder capital (sometimes called customer capital or external capital) or knowledge inherent in external business relationships. This component includes what accountants refer to as "goodwill" and "brand."



The iceberg metaphor illustrates how most of the market value of a corporation is largely hidden from view. The hidden part consists of assets that knowledge management addresses. I call them 3 P's: **people**, **processes** and **partnerships/patrons**: corporate knowledge is embodied in people, embedded in processes and earned with partners and patrons.

Knowledge is not only the repository of corporate value, it is also essential in the process of creating value. Knowledge has indeed become the decisive factor of production. But note that the corporation owns only two components of market value: financial capital and only the explicit forms of structural capital. The corporation only "rents" human capital, and slowly "earns" stakeholder capital.

Tacit forms of process capital inhere with the group of employees; they are lost when the employees leave or are regrouped.

3 — Knowledge is both repository and creator of value.

Because much of corporate knowledge is in people rather than in physical or financial assets, knowledge workers and how well managers treat them have become important in the knowledge economy.

Knowledge management (or KM) gurus define “knowledge” more precisely and narrowly than the common meaning of the word:

*“Knowledge is information **in action.**”*

— Carla O’Dell and C. Jackson Grayson, Jr.
— *in: If Only We Knew What We Know*

*“I define knowledge as a **capacity to act.**”*

— Karl-Erik Sveiby,
— *The New Organizational Wealth:
Managing and Measuring Knowledge-Based Assets, 1997*

*“Justified belief that increases an entity’s **capacity for effective action.**”*

— Ikujiro Nonaka,
— *Organization Science 5(1):14-37 (1994)*

*“Knowledge is information that changes something or somebody — either by becoming **grounds for action**, or by making an individual (or an institution) **capable of different or more effective action.**”*

— Peter F. Drucker, *in: The New Realities*

To KM practitioners, “knowledge” is capacity for effective action, including information that is useful for effective action, producing results, or creating value¹. Information and knowledge overlap but while information is “**know what**”, knowledge is “**know how**” or information is “**what is**”, while knowledge is “**what works.**”

¹ The Knowledge Management Association of the Philippines came up with an “elevator speech” on what is KM. An elevator speech is a short communication about something, so short you can convey a good grasp of that something to anyone while you are riding an elevator.

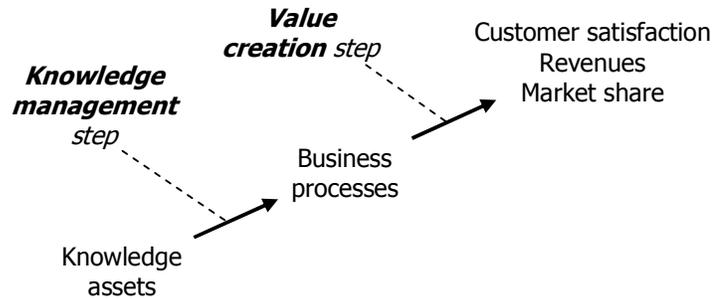
Here is the KMAP elevator speech telling you what KM is:

“In today’s global economy, knowledge is the basis of competitive advantage. KMAP is dedicated to the advocacy and practice of KM for the purpose of attaining that competitive edge for the Philippines.

“Knowledge enables effective action or is useful for producing results. Knowledge goes beyond data and information which technology has enabled to be stored and accessible to anyone. Knowledge has become so vast, pervasive and overwhelming; hence there is a need to harness the power of knowledge.

“Knowledge management is creating, acquiring, exchanging, sharing and applying knowledge for personal success, enterprise growth and community development.”

The chart below shows how knowledge is useful for creating value. Knowledge, such as information useful for effective action, is input to the business processes that create most value for a corporation. Critical knowledge assets or CKA are those assets crucial for performance of core or critical business processes. In fact, this chart summarizes how KM is linked to business results, or to desired organizational performance in the case of non-profit and government organizations.



Thus,

“Knowledge management is...

- *getting the right knowledge to the right people at the right time and*
- *helping people share and put information into action in ways that strive to improve organizational performance.”*

*— Carla O’Dell and C. Jackson Grayson, Jr.
in: If Only We Knew What We Know*

I also define knowledge management as **sourcing and deploying knowledge in a manner that creates most value** for an organization, individual or society.

4 — KM: deploying knowledge for maximum creation of value

3. The Tacit Dimension

I spoke of “**tacit**” forms of knowledge. Much know-how is tacit; they lie unexpressed, undocumented, and sometimes unrecognized and unappreciated, in people’s minds. I have asked hundreds of listeners or students the following question; ask it also of yourself:

Imagine that everything you have ever written, including any available transcripts of what you have said, is placed in two big piles in a room, the first pile reflects your know-how or skills and the second pile is the remainder of the documents. What percent of your total knowledge is in the first pile?

Most likely your answer will be much less than 50%. In other words, much of your knowledge is tacit.

That know-how is tacit does not mean it is unimportant or somehow unreal. No. Your tacit knowledge of riding a bicycle is real and effective although you cannot write it down as a manual (**explicit knowledge**) or tell me how you do it. In many things in work and life, we know more than we can tell, and we can tell more than we can write.

Because tacit knowledge is less visible, what often get managed are those that managers can more readily see, namely, explicit knowledge. In fact, herein lies the difference between knowledge management and information management:

5 Most knowledge is tacit yet what gets managed more is explicit knowledge.

- Information management deals with information objects, and with people-to-information interface but KM deals with both people-to-information and people-to-people interfaces.
- KM attends to both explicit and tacit knowledge, while information management can handle only explicit knowledge.

Managing tacit knowledge is an exciting frontier. It is about tacit-to-tacit knowledge transfer, e.g. mentoring, storytelling and peer assist. It is also about developing new taxonomies, indicators and assessment tools. It includes capturing know-how in expert systems. It deals with social networks and informal knowledge exchange mechanisms in communities of practice. It is about how human and organizational learning take place. Among the authors in this exciting school of knowledge management are Ikujiro Nonaka, David Snowden, Etienne Wenger, Chris Argyris and Peter Senge.

The chart below summarizes the overlaps between KM, human capital management and information management.

Managers cannot manage what they cannot see. KM provides the framework to enable managers to better recognize what they may have hardly seen before: tacit knowledge. For instance, the KM framework led to a renewed appreciation of an age-old method transferring high tacit content knowledge: mentoring or apprenticeship. For another instance, the age-old Japanese *iemoto* traditions led to an appreciation by Japanese corporate KM practitioners of the importance of “ba” or that tacit quality of interpersonal space within a team, between a customer and a customer relations officer, etc. which facilitates knowledge sharing and knowledge creation – which some technology-oriented KM practitioners find great difficulty in grasping.

Iemotos are traditional Japanese schools for learning specific crafts (e.g. flower arrangement, calligraphy, kendo, pottery, etc.) where students live and learn from a master craftsman over many years via tacit methods of learning.

	Tacit Knowledge	Explicit Knowledge
Stakeholder Capital	Stakeholder/client "ba", informal networks, external communities of practice	CRM system, e-Commerce network, external shared databases
Human Capital (scope of HRM System)	Mentoring/ apprenticeship	HRIS, e-learning and other HRD systems
Structural and Process Capital	Organizational learning, TQM culture, internal communities of practice	Library and database, hardware and software, documented processes

Scope of Information and Communication System

I earlier spoke of tacit forms of process capital. There could be informal but efficient work processes in a business, such as preparation of local condiments, which had been developed and perfected over time. They are informal or have not been manualized or formally standardized. Once a work team is regrouped or loses a member, the efficiency of the work process suffers – risks that are not formally recognized and addressed by managers who are not aware and appreciative of tacit knowledge. The knowledge that is embedded in the work processes and embodied in the team members are all tacit knowledge.

4. KM Tools

Like mentoring and apprenticeship, many tools that have long been practiced are also KM tools. Many are practicing KM without knowing or calling it so.

Listed below are some KM tools. Notice that many tools are not new; what is new is the KM framework. Notice too that KM tools can be classified into what Karl Erik Sveiby calls the "IT track" and the "people track" in KM.

Some KM Tools

Stage in the Knowledge Cycle	Technically-oriented KM tools	Behaviorally-oriented KM tools
Internal and external sensing	Competitive intelligence, Market survey, Organizational diagnostics e.g. Organizational climate survey, KM system assessment	Customer complaints desk, Recognizing communities of practice
Creating, culturing and capturing	Traditional R&D, Documentation of tacit knowledge, Development of work templates,	Organizational learning tools e.g. Team Learning and Lessons Learned

	Codification of best practices, Data mining, Manualization	Meeting, Mentoring and apprenticeship, Buddy system
Organizing, storing, accessing, sharing/transferring	Intranet and portal, Search engine and automated alert, Knowledgebase, e-Learning, Knowledge mapping, Knowledge network e.g. e-group and discussion list	Community of practice, Help desk, Peer assist program, Cross-visit, Storytelling
Facilitating, motivating, synergizing	Chief Knowledge Officer, Chief Learning Officer, Groupware, Incentive systems e.g. employee innovation program, Royalty, Purchase/licensing of IPR	Team Learning including Dialogue, Knowledge champion, Knowledge broker, Visioning exercise, Corporate symbol or logo, Process ownership, Portal ownership
Tracking/monitoring, measuring, evaluating, managing	Intellectual capital accounting e.g. Skandia method, Learning organization diagnostics, Project evaluation, Post-mortem, After-action report, KM system	Learning history, Process documentation
Using/reusing	Transfer of best practices, Employee performance support system e.g. CRM tools, Role-based portal, Use of process tools/templates	Action learning, Double-loop learning, Help desk, Peer assist program

The most important stage in the Knowledge Cycle is the last – use or re-use – because **creation of value**, production or benefit occurs at this stage. This is the stage that justifies, and can/does pay for, the other stages in the cycle. The requirements of this stage should drive the design and management of KM systems.

6 — Knowledge creates value at the point of use.

The other important stage is knowledge creation. New knowledge from this stage is essential for competing for market share in a stable market, for opening up new niches or for inventing novel business models that create completely new markets. A school of thought in KM views that managing knowledge that is already there should be done anyway by everyone, but what is more important is creating new knowledge. For example, transferring best practice is copying

7 — Best practice is for copying; next practice is for getting ahead.

from or catching up with what existed while innovating “next practice” is creating what will become the “best” in the future.

Creating new knowledge is a matter of corporate survival. A study by Royal Dutch/Shell of Fortune 500 corporations (reported by Arie de Geus in his book “The Living Company”) showed that –

- Their average life expectancy is 40-50 yrs
- One-third of 1970 companies were gone by 1983
- Four key attributes of long-lived companies:
 1. ability to learn/adapt
 2. cohesion and identity (corporate persona)
 3. tolerance of differences, eccentricities and experimentations; decentralized; open to other possibilities
 4. financially conservative.

Thus, Peter Senge’s (the guru of organizational learning, of “Fifth Discipline” fame) noted in his foreword to de Geus’ book:

“... [many Fortune 500] corporations die prematurely — the vast majority before their 50th birthday... [due to] learning disabilities.”

8 — Corporations die from learning disabilities.

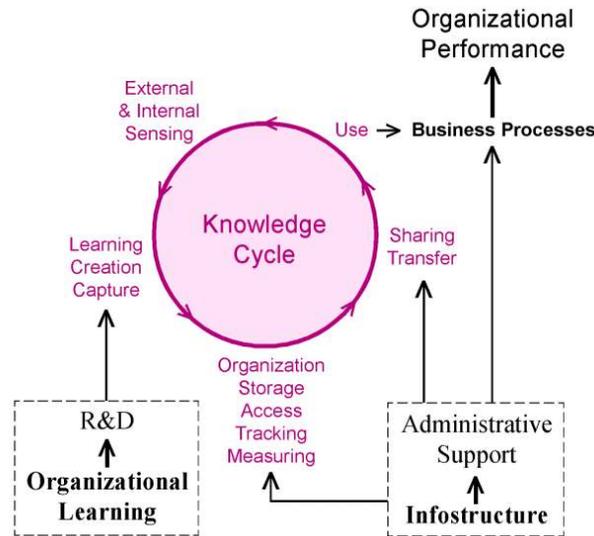
The other stages in the Knowledge Cycle are also important, but I must stress this point again: business results (in the private sector) or organizational performance mandates (in the government or civil society sectors) must always drive the management of the entire Knowledge Cycle. The core business process is the crucial point of use/reuse of knowledge. The chart below shows a way to visualize this.

5. Link between KM and Organizational Performance

The prerequisite to KM is that organizational goals or mandates are clear and unquestioned. The link between KM and organizational performance is through the business processes that create value for the organization (see figure below).

From U.S. surveys of corporate KM practitioners, their most popular KM tools are exchange of best practices and use of an intranet or portal.

- a) When a business process is repetitive or is performed simultaneously by many teams, overall productivity does increase after best practices are shared and implemented among the rest. The impact on the bottom line is evident. If the business process is core then standardization of best practice is imperative. But beware: standardization is double-edged; if it is too rigid or improvisation/improvement is too bureaucratic, standardization becomes anti-learning.



- b) A knowledge worker performing a core business process should be provided the right information and knowledge at his or her fingertips right when he or she needs it. A role-based portal or a web-based employee performance support system could dramatically improve business performance. To show you why, answer the following question:

“In a typical work week, what percent of your work time do you use hunting for information needed for your work?”

The answers to this question range from about 20 to 40%. Let us assume the answers among a team performing a core business process average 25%. Then they are wasting 3 months in every year hunting for information! If this wastage can be reduced by a customizable or role-based portal from 3 to 2 months, their productive work time will increase from 9 to 10 months (an 11% productivity increase) and a savings equal to their total one-month payroll will be realized! Such gains can be compared with the cost of acquiring or developing and implementing the portal, to assess the soundness of investing in this KM initiative. And we have not yet factored in the potential gains achieved from many-to-many sharing of knowledge that could take place whenever knowledge workers performing similar tasks are connected via an intranet.

The point is (below): provide the knowledge worker with customized and just-in-time information and knowledge.

	JUST-IN-CASE	JUST-IN-TIME
CUSTOMIZED	research reports, work templates, manuals	Role-based portal, filtered news

GENERAL	academic degree	Internet search engines
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The general guideline is: knowledge acquisition must be as close as possible to knowledge application.

The link between KM and organizational performance may be as straightforward in the government and civil society or non-government sectors and in development financing sectors. Our experience at the Center is that the development financier's measure of "project success" may not be the same as those of the recipient rural or indigenous people's communities. We found that:

- a) Community development leaders generally view "success" as also including intrapersonal and interpersonal elements besides the usual economic, technical, institutional, environmental and other elements of success. The development financier may have success measures based on the sustainable development framework, but the recipient communities hold a broader and more reflective "sustainable living" framework.
- b) To more completely capture knowledge in community development, documenting best practice (or structural capital) must be accompanied by characterizing the skills, attitudes and a tacit component we call "sophia" of the best practitioner (human capital).
- c) The tacit component of best practitioners' development knowledge consists of skills (technical, business/financial, managerial/organizational and behavioral/cultural), attitudes and a surprising element we could not easily label. The latter is somehow related to personal values, worldview and charismatic wisdom. We chose a neutral word, "sophia".

Whether, and how, "sophia" can be taught is a practical question. A more practical approach is to identify, recruit or involve people (e.g. "knowledge champions", "innovation leaders", "knowledge networkers") who already have this or similar personal ingredient relevant to a specific problem.

6. KM Stages

Many organizations start by deploying² common KM tools like intranet and exchange of best practices. This is common where the KM initiative is not organization-wide (it is only a "project"), not part of the company strategy or sponsorship originates below the CEO level. Most KM initiatives in the Philippines is at this stage.

² Alex Goodall (Oxford & Boston Ltd., Oxford, UK) defines three stages in the corporate KM maturity model: deployment stage, integration stage and transformation stage. In the last stage is, "rather than using KM to make processes more efficient, using KM to help find completely different things to do; using KM to help transform the individual; looking for quantum changes rather than incremental changes."

At this **deployment stage**, the practical question facing an executive considering a KM project is: *What KM tool will result in maximum impact on our bottom line?* In other words, if knowledge is what works, then what will work best? I call “what works best” in any specific corporate context as “high octane” knowledge. And the smart process of arriving at these answers I call “precision KM.”

With executive sponsorship and with KM as part of the company strategy, an organization can enter the **integration stage**¹ in the use of KM. In the Philippines, I have seen only one Philippine corporation that has successfully reached this stage. Among the problems I observed accompanying the transition to this stage are: leveling off, common language and understanding, and acceptance of KM across operating units; presence of a senior executive responsible for KM; and integration of KM in performance monitoring and budget processes.

I have not come across a local organization that used KM to reinvent itself (**transformation stage**¹) although I have seen a number of small firms established on the basis of new knowledge, i.e. new technology, new business model or new niches. Indeed, enterprise innovation is more strategic than product or process innovation.

9 — Enterprise innovation is strategic KM.

7. The Business Case for KM

The business case for KM is best shown by the winners in the annual Global MAKE Award, or “Most Admired Knowledge Enterprises.” The winners and finalists of the 2003 Global MAKE earned in 1992-2002 an average of 19.6% Total Return to Investors which is 2.2 times greater than the Fortune 500 median. The 2003 winners were: Accenture, Amazon.com, British Petroleum, Buckman Laboratories, Canon, Ernst & Young, General Electric, Hewlett-Packard, Infosys Technologies, IBM, McKinsey, Microsoft, Nokia, Pricewaterhouse Coopers, Royal Dutch/Shell, Siemens, 3M, Toyota Motors, World Bank and Xerox.

To excel in the knowledge economy, KM is therefore essential.

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A2
UNDERSTANDING INTELLECTUAL CAPITAL

Assets are things we own, while liabilities are things we owe other people. We call something “capital” if it earns, or it enables us to earn, income year after year.

The television set in my room is part of my assets, but I cannot claim that it enables me to earn any income. It is not capital for me. Of course, a TV set is capital for someone renting VCDs/DVDs or one offering workshops or promotions services.

10 — Anything that yields regular income is “capital.”

The mango tree in our front yard gives us fruits every summer. The fruits are not money income, but they are “natural income” that can be bought and sold in the market for money income. So, my mango tree is “natural capital” because it earns me “natural income” year after year.

The same is true with intellectual capital (see Chapter A1), and with its three components: human capital, structural capital (also called process capital or internal capital), and stakeholder capital (also called customer capital or external capital).

Let me show you three hypothetical examples to illustrate further the meaning of the three forms of intellectual capital.

Human Capital

Imagine a 45-years old Ph.D. holder consultant with 20 years of experience in his specialty field. He earns P1.5 million yearly.

Tangible assets	Laptop (cost=P150,000)	
Human capital	PhD, 45 years old 20 years experience	← CKA
Structural/Process capital	Nil	
Stakeholder capital	Nil	

Average annual income = P1.5 million
Market value ~ NPV = P12.78 million



Any entity that can earn that much yearly can be sold and bought at about P12-13 million (the net present value of a stream of annual P1.5 million incomes,

discounted at applicable equivalent commercial interest rates of 10% per annum). In other words, that much annual income can be expected from a commercial entity worth roughly P12-13 million.

Yet our hypothetical consultant has little tangible assets: only a laptop worth P150,000. Where is the earning capacity coming from? There must be capital somewhere else that accounts for that much earning capacity.

If our accounting framework is limited to physical and monetary assets, we will be unable to locate what this mysterious capital is. Yet buyers and sellers of stocks, anticipating the future earning capacity of an equivalent company, will be willing to pay about P12-13 million for it!

The capital responsible for this earning power is, in the case of this consultant, human capital. It deserves to be called “capital” because it enables the consultant to earn an annual income using it.

Some observations:

- When physical capital is used to produce income, it depreciates. When human capital is used to produce income, it appreciates! A doctor gets better at his profession the longer he practices it, and conversely, his skills deteriorate once he stops.
- The market values an enterprise based on its future earning capacity, while traditional accounting values an enterprise based on its past and current transactions. They cannot be compatible because they are looking at two different things!
- The consultant’s critical knowledge asset (CKA) is his human capital, not his tangible capital, that is, his laptop.
- Government agencies and civil society organizations also create value – such as social services, public infrastructures, policy advocacy, etc. Although market values are not assigned to them, they are nevertheless socially valuable products of intellectual capital.

11 — Unlike physical capital, human capital appreciates when used.

Structural Capital

She is an excellent designer and facilitator of workshops. She finished a Masters degree in Industrial Psychology, is 35 years old and has practiced his profession for ten years.

Our hypothetical expert earns about P700,000 every year, an amount well above the average masters degree holder. What is her capital? It must be more than her degree. It cannot be her tangible assets because she has practically no professional equipment for her practice.

She earns because she delivers her services well to her customers, and she does so because she has developed a “armory” of 44 workshop tools and techniques. She has designed 15 different workshops, drawing from 65 modules. That is her capital – structural capital.

Tangible assets	Nil
Human capital	MS graduate, 35 years old 10 years experience
Structural/Process capital	65 modules for 15 workshops, 44 workshop tools/techniques ← CKA
Stakeholder capital	Nil

Average annual income = P.7 million
Market value ~ NPV = P6.6 million



An enterprise earning P700,000 annually is worth approximately P6.6 million – and certainly that is not contributed by her tangible assets. It comes primarily from her structural or process capital – her critical knowledge asset – and secondarily from her training.

Some observations:

- Structural capital is often explicit. It can be copied or stolen, but it can also be copyrighted or patented.
- If someone pirates a workshop technique the effectiveness of which depends much on her tacit knowledge, then the value of the structural capital to the pirate is less. Sometimes the critical knowledge asset is the intimate combination of structural and human capital. Other examples of this combination are a skillful portrait artist using an airbrush, a airline pilot at the helm of a Boeing 747 and a samurai warrior using a finely crafted sword.

12 — Structural capital can be stolen, but not human capital.

Stakeholder capital

Imagine a high school graduate. He is a non-life insurance salesman accredited with a well-known insurance company. He has a personal network of finance and procurement officers of big corporations – his clients.

A high school graduate in the Philippines can hardly earn P60-80,000 a year but this insurance salesman’s annual income is about P300,000 million. This income is equivalent to an enterprise whose market value is about P3 million.

Tangible assets	Nil
Human capital	HS graduate, 25 years old Training from insurance co.
Structural capital	Policy and coverage templates
Stakeholder capital	Accreditation with well-known insurance company; personal network of finance officers ← CKA

Average annual income = P.3 million
Market value ~ NPV = P2.93 million



What is his capital? Certainly not his high school education. He uses some templates in his work selling non-life insurance, but those by themselves are worthless.

His critical knowledge asset is his relationships: with the well-known insurance company and with executives in big corporations. His relationship is equivalent to P3 million worth of capitalization.

13 — Relationships, an intangible, can be the basis for making money.

Some interesting observations:

- People who engage in graft and corruption intuitively know that relationship – or government “connection” in Filipino slang – is a form of capital.
- Stakeholder capital is closely related to the anthropological concept of “social capital” – the trust, informal exchanges and network of relationships in a group that enables the group to effectively act together or its members to effectively pursue their individual objectives within the group context.
- When pressed to explain the gap between book value and market value, the accountant will only say it is “goodwill.” The accountant is actually referring to stakeholder capital.
- Don’t let the intangible quality of stakeholder capital to fool you. Although indeed intangible (i.e. it is difficult to measure in pesos), it generates very tangible results.

In short, intellectual capital, or “knowledge,” is **embodied** in people, **embedded** in work processes and prototypes, and **earned** in relationship with patrons and partners.

B1

THE SHIFT TO KNOWLEDGE: Power from Expertise vs. Power from Capital

A former executive director of the National Computer Center and my colleague, Col. Fermin Javier, told us a true story. It conveyed crucial lessons about how corporate power in the beginning of this third millennium is shifting from those with money to those with useful knowledge.

That inspired me to start my UP graduate class on “Information Technology and Organizational Change” on the following Monday evening with story telling. Many of my students — taking Masters in Technology Management — are middle-level managers. In a decade or so, some of them would be CEOs and I felt they must grasp clearly the main themes behind the corporate paradigm shifts now sweeping across the planet.

Fermin's story went something like this:

"Two people started an IT corporation. One provided financial capital and the other, technical knowledge. [Let us call them Manny and Nollie, respectively.]

Manny, who has the money, promptly organized the business side and Nollie, who has the knowledge, put together a hard-hitting team of innovative and well-motivated computer engineers and programmers.

"Within two years, the company has well surpassed their profit projections.

"But something else not in their projections happened: there was a falling out between the partners. And it was so serious it came to Manny offering to buy out Nollie.

"Nollie agreed and planned to set up his own company. Now, the technical people got wind of the impending departure of Nollie. They liked his supportive leadership style and the teamwork they had developed, and they expressed their desire to join the company he will set up.

"Manny was alerted. He faced the prospect of fully owning a company but losing all its good people, and so he tried to fix up his differences with Nollie and win him back.

"Nollie refused. Instead, Nollie offered to buy Manny out.

"Having no better alternative, Manny had to agree — under terms favorable to Nollie."

This story hints at paradigmatic lessons. Generally, for IT firms:

Lesson #1: Earning power comes more from the knowledge assets of its technical people than from its financial assets.

Most of this knowledge asset does not belong to the firm! The firm “hires” it from its technical people.

Investors know this in their guts. As a result, market values of listed IT firms are often many times their book values. The gap between market and book values is the intellectual capital of the firm — something traditional accounting methods largely miss out!

According to Andrew Carnegie, “The only irreplaceable capital an organization possesses is the knowledge and ability of its people.”

Lesson #2: Knowledge, not money, is power. Corporate power belongs more to the holders of technical expertise, than to the owners of capital. Alvin Toffler saw this a decade ago; and sociologist Daniel Bell who coined the term “post-industrial society” foresaw it two decades ago.

14 — Power is shifting from owners of capital to owners of knowledge.

Lesson #3: IT experts are very marketable and therefore highly mobile. If underpaid, under-challenged or mistreated, they can and do go elsewhere. High turnover plagues IT companies — a fact of life among high-tech service companies, especially in developing countries like the Philippines.

Lesson #4: Keeping good people, earning their loyalties, motivating and nurturing them make good business sense. Because useful knowledge has become the crucial asset, and because knowledge is inherently with and in people (and less in “bricks and mortars” or banks and safes for that matter), managing people and managing knowledge have become most important.

The “smokestack industry” metaphor, with its associated adversarial relationships between blue collar workers and management, is being replaced by the “knowledge industry” metaphor, with its empowered white collar “knowledge workers.”

Companies vie with each other in innovating and offering attractive compensation packages. The most attractive is part-ownership of the company.

I could sense that my son, who is a computer design engineer in Silicon Valley in California, is motivated less by salary and more by the stock option plan that could turn him into an instant millionaire if the product he is spending evenings on unpaid overtime to help design, would lead to a handsomely successful IPO.

Lesson #5: If people and knowledge have become key assets, then the converse is also true: people could also be key liabilities or obstacles.

Mistrust, backward mindsets, unconscious childhood programs, inability to truly listen, misunderstandings and disaffections, and other human failings become more crucial. In Fermin's true story, disaffection led to a corporate style “people power revolution.”

Peter Senge of MIT wrote in his 1990 book, “The Fifth Discipline: The Art and Practice of the Learning Organization” (one of the “five key business books” in the

last two decades according to the Harvard Business Review), pointed out that personal mastery and explicit awareness of your own mental models and assumptions are two of the essential five disciplines in building a 21st century learning organization.

According to Management Today in 1999, “Peter Senge's advocacy of the learning organization helped begin a revolution in the workplace. And, the relevance of Senge's work is growing rather than diminishing over time. As more businesses go global, the need to overcome psychological barriers to necessary organizational change increases.”

Understanding and truly appreciating the paradigm shifts in the business world — and consciously unlearning mindsets and attitudes less fit for new global realities — will help us adjust to, and capture new opportunities from, the tidal wave of complex changes sweeping across the planet.

15 — Unlearn outmoded mindsets to better survive new global realities.

"The problems in the world stem from the difference between how we think and how the world works."

– Gregory Bateson

B2

THE SHIFT TO KNOWLEDGE: Wealth from Intangibles

What we do not see we cannot manage.

And our paradigms or mental models determine what we see in the world — the corporate world, the academic world, the political world, or even the inner world within ourselves.

For example, before we can manage our own emotions, we must be able to monitor them. Thus, the doorway or the first of the five domains of emotional intelligence is awareness of our emotions. In school, we learned more cognitive or head knowledge than affective or heart skills, more on how to make a living than how to live life. Yet, many studies abroad show that success in life and work is correlated more with EQ than IQ. There is a blind spot in our school systems.

As corporations enter the world of Internet and e-commerce, many carry with them a similar blind spot from outdated paradigms: they do not see about 80% of their assets. They devote more attention and energies to managing only about 20% of their assets!

That is a strong statement.

What makes the essential difference between outdated mental models and new better ones is how well they square with the real world.

So, let us examine the facts.

Most companies' stocks, especially those of IT and knowledge-based companies, are traded at many times their book value. The 500 companies in Standard & Poor's composite index had book value totaling an estimated \$1.2 trillion at year-end 1995, but a combined market value of \$4.6 trillion. In 1997, market-to-book ratio of all companies in the Dow Jones Index was 5.3, while for many knowledge-intensive companies it was over 10. It is fair to say that the accounting system sees only about 20% of market value.

Intangible-to-tangible assets ratio of Dow Jones companies fluctuated during the post-World War II period but since the mid-1980's the ratio had been increasing steadily, with intangible assets surpassing tangible assets by 1990.

We remember that PCs appeared in the late 1970s. In 1985, the backbone of Arpanet (the precursor of Internet) was opened for interconnection to other networks, and starting in 1991 commercial use of the Internet was allowed. In the period from 1989 to 1991, Tim Berners-Lee of CERN initiated the World Wide Web and its protocols, paving the way for the first browsers (Mosaic and Netscape) and popular multimedia use of Internet.

Two good examples of this trend are American Airlines' computerized reservation system SABRE, and the subscriber network of America On-Line (AOL).

The market value of SABRE was tested when the company sold 18% of SABRE to the public. In the following year, SABRE accounted for one-half of American Airlines' assets. An information system has become as valuable as the airline's 700 jets!

AOL's fixed assets consist of its offices and network equipment including a bunch of modems; it is basically a portal and network connecting millions of subscribers to each other, to databases and e-stores, and to the Internet. In 2000, AOL's market value was a whopping \$140 billion! This value is mainly accounted for by a unique form of intangible asset: its huge subscriber network. AOL has cashed in on Metcalfe's Law which says that positive externalities from a network increase as the second power of the number of users of the network.

Here are some rather strong statements from practitioners:

"For Internet companies, there is hardly any relationship at all between book value and market value. Accounting may perhaps be the world's second oldest profession, but its survival may well be at stake if this trend continues"

Claes Fornell, Donald C. Cook Professor of Business,
University of Michigan (July 2000).

"The accounting system doesn't capture anything, really."

Judy Lewent, CFO of Merck.

"Traditional financial controls are of limited use in managing, understanding and assessing a knowledge-based company."

— 1997 Annual Report of WM-data,
biggest Swedish software/consulting firm

Now, the gap has been recognized as consisting largely of "intellectual capital" (a term first used by Leif Edvinsson of Scandia) — the accumulation of useful knowledge within the firm that exists in various forms like skills of employees, work procedures, trademarks, software, network of customers and those softer and subtler assets such as relationship and collaborative skills, culture of openness and innovation, customer orientation and capacity for team learning — that accounts for the growth potential of a company that investors sense when they bid up the price of its stock.

The pressure is now on to erase this blind spot. In April 1999, Commissioner Steven Wallman of the U.S. Securities and Exchange Commission recommended:

"...coming out of the change in our economy from one that is industrial-based to one that is knowledge-based, where intellectual property, soft assets, and other intangibles increasingly make up the bulk of the asset base for wealth production in our society...we must learn to better measure and account for these assets, and reflect that in the financial reports of corporations."

The consensus among leading Swedish and American proponents of measuring intellectual capital is that the total value of a firm is like an iceberg consisting of

16 — Intellectual capital: less readily seen but matters more

- A small visible tip, the net worth measured by traditional accounting methods, and
- A larger invisible submerged portion, the intellectual capital, consisting of:
 - human capital: the skills, experiences, work attitudes of employees;
 - stakeholder capital: network of loyal customers and suppliers, brand, reputation, partners; and
 - structural capital: work processes, innovation culture, patents and copyrights, databases, manuals, libraries.

There is now a flurry of development and testing of various ways of conceptualizing and measuring or observing the components of intellectual capital. We can see more of the submerged part of the iceberg. We are stretching the meaning of “capital” and “asset” to include something less visible and less palpable, but more real and human, namely: useful knowledge.

At last, we know what we were unable to see. And in seeing, we can begin to manage.

"The real voyage of discovery consists not in seeking new landscapes, but in having new eyes,"
— Marcel Proust.

B3

THE SHIFT TO KNOWLEDGE: Changing Foundations of National Power

The wealth of nations and the foundations of national power are changing.

After the industrial revolution started in England three centuries ago, power shifted from landowners to capitalists. Wealth creation shifted from plantations to factories, and from harvesting natural resources to manufacturing them into more useful forms.

Kings, nobles and lords owning or controlling territories receded in the background, while bankers and industrialists who can mobilize and deploy financial resources came to the foreground. The internal combustion engine, assembly line and replaceable parts eclipsed in importance irrigation, domestication of work animals and seed technologies.

Another power shift is now taking place.

The invention of the computer wedded to the telephone has started a new revolution, a revolution in ICT or information and communication technologies. Wealth creation is shifting from harvesting and processing of natural capital, to deployment of human capital to create and apply knowledge.

Smokestack industries like GM, Bethlehem Steel and Reynolds Aluminum are being joined by knowledge-based companies like Netscape, Oracle and Yahoo.

Developed economies are less and less industrial and more and more service economies — their national incomes and employments are shifting to the tertiary or services sectors.

Underdevelopment is less a problem of lack of financial capital, but more a problem of lack of productive ideas and people who generate them.

Power is shifting from those with money to those with knowledge. Colin Clark, Daniel Bell, Alvin Toffler and John Naisbitt are being proven right.

With the end of the Cold War 10 years ago, international conflicts began to shift subtly away from territorial, resource or ideological warfare and towards trade, technological and information warfare. National intelligence agencies gave new or more attention to economic and technological espionage. Competitive intelligence became a new profession serving businesses.

A deeply perceptive remark by former President Fidel V. Ramos had stuck in my head:

"The most important wars of the 21st century will be fought no longer on the physical battlefield, but in corporate boardrooms, laboratories, stock exchanges, classrooms, and shop floors."

Many petroleum experts foresee world oil reserves becoming economically depleted in three decades. The World Bank estimated static lifetime indices

17 — The basis of national power is shifting to knowledge

for some strategically important minerals and made similar worrisome conclusions. The World Commission on Environment and Development, created by the UN General Assembly, concluded more than a decade ago that creating wealth via withdrawal from nature's limited capital funds is a basically unsustainable development strategy that only favors present generations at the expense of future generations.

The common task facing national planners is to prepare their economies to pass crucial hurdles in this century as painlessly as possible, such as:

post-industrial transition: shifting creation of wealth from extraction and processing of natural resources to creation and useful application of knowledge;

long-term ecological sustainability: shifting from withdrawal of natural capital to harvesting of natural incomes; and

planning paradigm: shifting from political influence and government regulation to market forces, and from narrow domestic to broader regional or borderless horizons.

Production and trading based on non-renewable energy and material resources suffer from basic physical limitations that hardly affect production and trading of information- and knowledge-intensive goods and services. Shipping goods is more expensive than downloading software. Sending a letter by air mail costs a hundred times more than e-mailing the same letter.

Since 1985, the value of international trade grew twice faster than world output of goods and services, and international trade in services grew faster than trade in physical goods or commodities.

And international financial transactions grew twice faster than total world trade, and furthermore, markets for derivative financial instruments (futures, options, securities, etc.) grew faster than markets for stocks and bonds. Observed Walter Wriston, ex-chairman of Citicorp: "Information about money has become more valuable than money itself."

National strategies must rely on new parameters: information, technology and knowledge. In the ultimate analysis, the strategic issue is how to nurture or attract people who know how to create, move and use all these. Substitute "nation" for "organization" in another quote from Walter Wriston and you get the key idea: "The organization (nation) that figures out how to harness the collective genius of its people is going to blow the competition away."

Prof. Barton Kunstler of the Lesley University School of Management distilled lessons from history's most successful "creative hothouses" such as ancient Greece, Renaissance Florence, Elizabethan England and Parisian café society (The Futurist, February 2001). According to Prof. Kunstler, among the national traits common during those hothouse periods were:

- a sense of mission and belief in the absolute meaningfulness of work;
- respect for thinkers and the fruit of thought, a respect for mastery and standards of quality;
- mentorship relationships abound, and many students become teachers;
- critical thinking integrated with creative thinking;
- a drive to continually challenge and recreate fundamental assumptions, and recognition of multiple ways of knowing, teaching and perceiving as part of the creative process; and
- openness to external currents in art, politics and society, and exposure to "metasystems" or broader systems of thought and operations that stimulate powerful imaginative leaps in people previously bound to more narrowly defined systems.

Creating knowledge has become the name of the game.

18 — Wanted: cultures that encourage and nurture geniuses

B4

THE SHIFT TO KNOWLEDGE: People and Services

The post-industrial transition is making people more important than money.

Many developed economies like the United States, Japan, South Korea, Canada and Singapore are no longer industrial economies. More of their workforce is deployed in, and more of their GDP comes from, the service or tertiary sector than from the industrial or secondary sector. They have become service economies or “post-industrial” economies.

While the primary sector is land-intensive and the secondary sector is energy-, raw materials- and capital-intensive, the tertiary sector is knowledge- and people-intensive. Knowledge workers and knowledge experts have become key players.

A curious thing happened to the Philippine economy in 1984 to 1985. The capital flight after Ninoy Aquino was assassinated hurt the industrial sector so badly that since then, more of our employment and GDP had been from the services sector than from the manufacturing sector. In the 1990's, services averaged 43% of GDP while industry only 35%.

The Philippine economy had leapfrogged to become a service economy!

Our export earnings had also shifted from postwar traditional commodities (sugar, abaca, tobacco, copper, gold) towards services (overseas workers). We have become a net labor exporter.

Combine these with other fundamental facts about our economy — net energy importer, high population growth, inadequate quantity and quality of raw materials for steel and petrochemical industries and non-existent machine tools industry — and we can easily surmise that our competitive edge is generally not in industry but somewhere in the services sector.

Other basic facts on the Philippine economy and society point to the likelihood that knowledge-based services could well become the competitive edge of the Philippines:

- fast growth of Internet access and short message service, or “texting” via mobile phone;
- liberalization of the telecoms industry;
- numerous privately-owned colleges and universities;
- second-largest English speaking population;
- high literacy rate;
- small gender gaps;
- high value on education, interpersonal relationships and caring; as well as
- a very open and democratic society.

Open and wide democratic space has become essential for economies competing in the 21st century. Democracy can best provide the environment for encouraging and sustaining creativity and innovation, employee empowerment, free flow of information, free enterprise and networking for tapping productive synergies. In fact, a tidal wave of democracy has been sweeping over the planet during the last two decades.

We discern this from the combination of five powerful trans-societal trends:

- political: the break-up of the Soviet Union and democratization of Eastern Europe; replacement of military dictatorships with elected leaders in Latin America; fall of dictatorial regimes in Taiwan, South Korea, Philippines and Indonesia; end of apartheid in South Africa; recognition by Israel of the Palestinian Liberation Organization;
- economic: the shift from socialist to market economies in China, Mongolia, Vietnam, and Eastern Europe where decision making by a few central planners was replaced by choices of millions of consumers;
- social: the growth of the voluntary, non-profit and non-government organizations, which mobilize civil society for causes such as human rights, rights of indigenous peoples, women's rights, environmental protection, etc.;
- technological: satellite TV, personal computer and Wireless Application Protocol-enabled mobile phones which are placing tremendous information, computing power and choice in the hands of individuals and households; and
- organizational: the flattening of organizational hierarchies, growth of horizontal networks and virtual communities, emergence of autonomous intrapreneurial work teams and post-industrial empowerment of knowledge workers.

This powerful tidal wave of democratization is shifting power downward from the state and government to the people. The sovereignty of nation states is under siege from three directions:

- from above: adherence to international agreements necessary to solve problems that cut across national boundaries such as terrorism, environmental problems (such as the Kyoto protocol to address greenhouse warming and the Montreal protocol to address depletion of the ozone layer) and trade (the World Trade Organization and regional trading blocs);
- across: electronic flows of money and information across national borders that are difficult to monitor and control by government authorities; and
- from below: the democratization wave and pressures from civil societies that are becoming more educated, better informed, more vigilant and better able to voice out their will.

The democratic and post-industrial transitions are distinct but converging megatrends. The first is a shift of political power from the state towards the people, and the second is a shift in genesis of production from physical and

19 — A global tsunami is underway: democratization

financial capital towards intellectual capital.

With due apologies, I cannot resist the temptation to rephrase President Clinton's 1992 campaign slogan: "It's the people, stupid!"

B5

BENEFITS FROM KNOWLEDGE MANAGEMENT

Knowledge management (or KM) is –

- “*getting the right knowledge to the right people at the right time*” and
- “*helping people share and put information into action in ways that strive to improve organizational performance*”

according to Carla O’Dell and C. Jackson Grayson, Jr. in their book “If Only We Knew What We Know.”

Benefit is realized whenever knowledge is used or re-used.

For example, how long does it take for a *Sangguniang Panglungsod* (City Council) to conceptualize, research, draft, deliberate and approve a city ordinance? Or, how long is a typical city legislative cycle? Suppose there is a KM system to locate a second city elsewhere in the Philippines which had passed a similar ordinance, then the first city can get a copy of it and then adapt it to their specific needs in a much shorter time!

6 — Value is created whenever knowledge is shared and re-used.

The benefit of such a system is in the form of:

- Shorter learning curve (it is fastest to copy, faster to copy and adapt, and slowest to re-invent from zero)
- Less likelihood of repeating mistakes
- Less time and resources, e.g. manpower and money

The ordinance from the second city acted as a “**work template**” for the first city. The best work template is a documented “**best practice.**” Whenever a best practice is transferred and replicated, even partially, then productivity increases. Benefits reported from transfer of best practices in some US companies run in the hundreds of millions of dollars.

One of the tools in KM is setting up a “**community of practitioners**” or CoP. CoP is a formal or informal group of people engaged in the same or similar profession or work. In a CoP, members meet face-to-face and/or on-line to share information and knowledge about their common interests. CoP is a vehicle for cross-learning among its members.

Imagine this hypothetical future scenario (I told this as part of my talk for the League of Cities of the Philippines in Cebu City in 2003):

10:15 a.m., Thursday, June 8, 2006, Argao, Cebu...

The Municipal Planning and Development Coordinator had been struggling with a technical problem: Where is the best location for the town garbage recycling facility?

She knows it must be far from populated areas. But she knows too that prevailing wind direction, land values, location of nearby deep wells, slope and geologic foundation are also relevant factors. How does she combine all these information to get the best location?

Then she remembered the discussion list of LOGOSHARE, a local government knowledge sharing network operated by Galing Pook Foundation. She posted a query at 10:22 a.m.

By 2:27 p.m. the MPDC in Balanga, Bataan posted a reply in the list: they solved the same problem using a simple overlay mapping software using Linux, and he is willing to email her a copy and help her how to use it!

A CoP member derives benefits in many ways. She can –

- Ask other members who or where needed knowledge can be accessed
- Pick up “hot tips” or “tricks of the trade” from other members
- Engage in insightful discussions (face-to-face or on-line) with professional colleagues on topics related to her work
- Conduct research using the CoP’s database, if it has any
- Keep up with the latest news and developments about the CoP’s area of interest.

20 — A network enables knowledge sharing among many

CDS is an example of CoP.

Very often, knowledge (defined as capacity for effective action) is tacit, such as the expertise in people. Tacit knowledge is undocumented or unrecognized knowledge. You cannot read it anywhere because it is not printed. It cannot be found in the Internet or in any database. You have to go to the person who has it.

Aling Loleng (Madame Loleng) is a good cook. Why, she is a super-duper cook! One of her creations is a unique and unforgettable *haleyang ube* (a thick sweet paste made of violet-colored root crop or ube) that sells very well for birthdays and during Christmas. How to prepare an *Aling Loleng haleyang ube* is a secret safely locked up in her head. Now that secret qualifies to be called knowledge, going by the definition of “knowledge” as capacity for effective action. That also means that Aling Loleng is engaged in “**knowledge creation**” or “**knowledge innovation**” – another KM tool. This is a powerful tool for attaining competitive advantage or for creating new product niches.

One way to transfer that knowledge is to ask Aling Loleng to write down her recipe. In KM that is called “**documentation**” or “**codification**” of tacit knowledge. It is a KM procedure for tacit-to-explicit conversion of knowledge. If you can convince Aling Loleng to write that recipe, then many more people can earn money selling that special *haleyang ube*.

No, Aling Loleng won’t write down her recipe. You see, knowledge encompasses

information useful for effective action and therefore, very often knowledge has commercial value. In the world of trade and commerce, knowledge is proprietary and is bought and sold. In the world of governance and civil society, knowledge is more often not proprietary and is freely shared.

21 — Knowledge generates economic benefit

Now, Aling Loleng is not exactly a selfish woman. Her children have no talent or inclination for cooking and she does not want to give something of value to those who will not appreciate, practice or add more value to her gift. She noted that her niece is also a budding good cook, and one day she decided to make her an apprentice. She coached and mentored her in making *haleyang ube* and other fine dishes she knows.

22 — Sharing multiplies knowledge use and benefits

Apprenticeship, coaching, mentoring, “peer assist” and “cross-visits” are tacit-to-tacit – and age-old – ways of knowledge transfer.

In my basic KM lectures, I conduct mini-surveys. One question I ask my audience is: “In a typical work week, what percent of your time do you use looking for information you need for your work?”

The answers vary greatly but a typical answer is about 25-35%. The figure means that a knowledge worker wastes about three to four months every year doing nothing productive while hunting for needed information. A KM tool for cutting down this wasted time is a “**role-based portal**”, which is customized to the information needs particular to a knowledge worker. If the portal of an organization’s information system is customized such that their knowledge workers save one month of time hunting for needed information, that means the portal is able to save the equivalent of one month of payroll of the organization! This amount is in the millions of pesos.

23 — Getting the right knowledge at the right time saves money

To customize a portal, we must find out the priority information needed by each knowledge worker. A prioritized list of information needs is called a “**knowledge taxonomy**.” Alternatively, the “**self-customizable portal**” is best – where the user herself can select and arrange his opening homepage to best suit her work requirements. In the latter, she – and the rest of the organization – does not need to bother the IT Department’s programmers for every little change in her portal.

From our quick scan of some KM tools (15 phrases in bold letterings), you will notice that many people have long been engaged in one form or another of KM without calling it so, and they have been doing it because of the benefits it brings.

C1

CRAZY ECONOMICS OF INFORMATION

As economic goods, information and knowledge exhibit some crazy behaviors.

We start with definitions. To mathematicians, physicists and communication engineers, information is a construct with precise meaning: a non-random and therefore meaningful pattern. Its unit of measurement is “bits.” To most laymen, information is a description or representation of what is. Data to a scientist is information she is interested in. Data is information she needs as input for the purpose of a study. In the study, she will analyze the data and obtain some meaning out of it.

Sound from my Honda Civic is simply engine “noise” to me, but to the experienced automotive mechanic, it is data or “signal.” The mechanic has an interest and a way of getting meaning out of it.

There are a wider variety of meanings in the term “knowledge” which overlap with that of “information.” Information in general tells about “what” while knowledge tells about “how.” Information deals with “what is” while knowledge specifically deals with “what works.” Knowledge is capacity for effective action; it encompasses information useful for effective action.

Scientific knowledge equals data plus a conceptual framework (hypothesis, theory or principle) plus passing a reality check. Science tells about how, and sometimes why, the world works the way it does.

Scientific knowledge plus utility equals technology. Scientific knowledge has some usefulness, such as for description, explanation and prediction. Unlike scientific knowledge, technology has distinct usefulness for creating wealth, for meeting market needs and demands and thus creating value. That is why scientific knowledge is free, open and publicly accessible, while technology is proprietary and more valuable. Technology is “know how” while science is “know what.”

Technology can be physical, biological, behavioral, organizational or social technology. On the other hand, experience plus utility equals expertise or skill. While technology is often explicit and tradable, skill is often tacit or not codified and less easily transferable.

Military, foreign policy and business strategists sometimes use information and “intelligence” interchangeably. I would prefer that the term “intelligence” be confined to information about intentions, capabilities and vulnerabilities of opponents or competitors, or about trends, threats and opportunities in the external environment.

I use the term “knowledge” in a business sense, i.e. all forms of information which are useful for creating value or for getting desired results. It covers the whole

gamut from technologies whether hard or soft, business methods and processes, business intelligence and tacit skills and expertise.

Let's see how information and knowledge behave as economic goods:

Information can be copied and recopied at will without diminishing the utility of the original. The reproduction of information does not suffer from physical and natural limits that govern economic goods that use non-renewable (i.e. stock limited) or renewable (i.e. flow limited) natural resources. Because information is encoded in paper, RAM/ROM, hard/floppy disk, magnetic film, CD or other physical media, then the availability of these media is the only physical limitation to copying and encoding.

For most information goods, most production/reproduction are in the hands of consumers, thanks to copiers, audio and video tape recorders, CD writers/rewriters, cameras, optical scanners, etc. Manufacturers control only the R&D end. Despite intellectual property laws, once the first copy is out in the market, the manufacturer risks ceding further reproduction to intellectual pirates.

Consumption of information does not destroy the original form of the pattern, and so preserves the utility of the information for the next consumer. The quality of "scarcity" does not strictly apply to information, in the same manner that it applies to petroleum, food or oxygen. Thus, economic laws, which describe how people behave towards scarce goods, apply with some difficulty to information goods.

The ratio of R&D to unit production cost of knowledge is very high. Pricing has less to do with unit production cost and more with the utility to the consumer. Generally, prices tend to be low because of economies of scale and incentive to pirate (the difference between price and the cost of reproduction to consumers). Pricing can be improved by versioning, enhancements, plug-ins and other means to vary the information product to address of specific consumer segments.

On the contrary, a manufacturer can give away his information product for free, e.g. Netscape browsers. At first, this appears to fly against all business logic. Actually it is a business strategy to build or capture an information network or platform — a vehicle for later selling many other information products. Network economics is the next topic.

Finally — the craziest behavior — unlike physical assets, knowledge assets appreciate with use (application) and combinations of use (synergy). Adding a search engine enhances the value of a text database. A teacher gets better the more she teaches. Skills increase with experience.

11 — Knowledge assets appreciate
with use

C2

ECONOMICS OF NETWORKS

In the Internet economy, the name of the game is networks — creating, owning or controlling networks and the technologies for creating or using them.

If there were only one fax machine in the world, it would be a completely useless device. If there are two fax machines, they can just start to be useful. The more fax machines are interconnected into a network, the more useful is each fax machine.

There are many examples of goods and services that get more valuable to a user as more users consume the same good or service:

- Communication: telephone, Internet access, SMS through mobile phones, Internet newsgroups, discussion lists and e-groups, Netscape browser
- Transportation services: railway, automotive parts
- Entertainment: audio cassette player, VHS video recorder/player, Pokemon trading cards, Playstation CDs.
- Others: credit card services, goods sold via network marketing schemes, “pyramid” scams.

The group of users is the “network” (there may or may not be a physical network linking the users).

When a new user joins the network, his action creates incremental benefits for all users in the network.

This benefit is called “network externality” (“externality” is a cost or benefit from an action or project, which accrues to parties other than the initiator of the action or the owner of the project).

24 — Every new network joiner adds benefit to all members

“Network effects” exert interesting consequences for business:

After a critical mass is reached, there is an incentive for new consumers to come in and thus the network continues to grow and adds more incentive for new joiners.

Contrary to expectations from the law of supply and demand, the marginal utility of buying (e.g. subscribing in a network) increases as the number of buyers (network members) increase.

A network creates business opportunities by serving as a platform for other goods and services that complement or use the network. For example, the attractiveness of a VHS versus a Beta video player depends, among others, on how many compatible videocassette products are available in the market. The attractiveness

of an MS-DOS versus a Mac operating system depends on how many software products can be run in each system.

The owner of a sole or dominant network dictates de facto technical standards, e.g. Microsoft's Windows operating system.

Between two uneven networks, incentive to interconnect is less for the larger network. Incentive to interconnect or merge is best between two networks of about the same size.

The success story of ICQ is illustrative.

ICQ ("I seek you") is a real-time Internet messaging system. Instant messaging is an Internet communication service that is more synchronous than e-mail but less intrusive than telephone. It is similar to SMS (short message service) over mobile phones.

With ICQ installed and a user is online, she knows who among those in her contact list are also on-line. She can send a direct message (which announces itself to the receiver with a cuckoo birdcall), e-mail with URL, file or picture attachments, or initiate a (two-way or multiple) chat request. She can also invoke external applications like games and some online conferencing tools.

Freely downloadable, this innovative tool was introduced in November 1996 by four young Israeli programmers. Users readily liked ICQ and it quickly took the Internet by exponential storm:

May 1997:	1 million subscribers
October 1997:	4 million subscribers
March 1998:	nearly 10 million subscribers
October 1998:	20 million subscribers
August 1999:	40 million subscribers
December 1999:	50 million subscribers
April 2001:	nearly 100 million subscribers

In June 1998, America OnLine bought the technology from its Israeli owners for \$287 million. Combined with AOL's own Instant Messenger (AIM) service, the acquisition gave AOL a definite numerical superiority and lead time advantage over MSN Messenger of Microsoft. At the time of acquisition, the subscriber base of AIM is roughly at par with ICQ. Then AOL merged with Time-Warner (which owns, among others, CNN) – a \$106 billion deal.

Then it was reported that AOL Time-Warner has been making arrangements with Sema, which produces SMS centers for GSM (Global System for Mobile communications) operators, to integrate AIM and ICQ instant messaging services with mobile phone services. This move that could allow 457 million users of GSM phones without WAP (Wireless Application Protocol for wireless access to Internet) to tap into AIM or ICQ via SMS. Similar deals have been arranged with two network operators, VoiceStream Wireless in the United States and Hutchison Telecommunications in Hong Kong.

AOL Time-Warner was positioning its technologies towards becoming the standard for instant messaging that will link mobile phone users with Internet PC desktop users and vice-versa.

There are wars over networks going on. The ICQ story is only a part of those wars.

25 — Owning a network creates exponential business opportunities

C3

SHAREABILITY AND DIFFICULT EXCLUDABILITY OF INFORMATION

Intrinsic attributes of information and knowledge make it difficult for people to treat them as proprietary goods.

Why do many people engage in software piracy? Why do some people copy entire books? I like asking questions of this sort: why do people, including myself, behave the way we do? What are our patterns of behavior and their underlying assumptions?

The question on software piracy led me to a rather abstruse journey. With some patience from you, let me walk you through it.

Goods can be classified in two ways.

First, a good can be shareable or non-shareable. A shareable good is one where more than one person can enjoy, use or consume the same good. Examples are a book, lecture notes, moonlight, a video disk and a scenic view.

My enjoyment of the breathtaking sunset at Manila Bay does not preclude other people enjoying the same good. This is a case of multiple consumption.

This is not the case for a non-shareable good. Another cannot breathe the oxygen I breathed in. Another cannot reuse the gasoline my car burned. What I ate cannot be eaten again by another.

Secondly, a good can be classified as either excludable or non-excludable from non-owners enjoyment, use or consumption. A landowner can put up a fence and employ security guards to keep other people out. You can place cash and stock certificates in a safe and not tell anyone the combination. The toll road operator can construct fences and toll gates.

The attribute of excludability of a good depends on whether there exists a practical, inexpensive, legal and socially acceptable way of preventing non-owners of the good from using it.

Some examples of non-excludable goods are sunshine, light from a lighthouse, undersea corral reefs, most Internet resources and the North Pole.

Excludability is not only an intrinsic attribute of the good but also reflects the state of technology, presence of legislation, enforcement and prevailing culture.

Based on the two classifications, there are four types of goods:

Non-shareable and excludable goods are often treated as individual private property, e.g. real estate, radio frequencies, trademarks, parking slots , etc. Non-

shareability leads to problematic behavioral consequences: people fight over these goods, they steal and hoard them, and they value sole possession of such goods.

Shareable and excludable goods are best treated as common private property, e.g. common condominium facilities, club properties, family refrigerator, etc.

Shareability allows group ownership, while excludability allows multiple enjoyment by owners while keeping out non-owners.

Non-shareable and non-excludable goods are treated as commons, e.g. air, fish from oceans, trees from forests, etc. The practice of private ownership is not practical for non-excludable goods.

This type of good is often freely accessible to anyone. But because of non-shareability, consumers tend to harvest as much as they can because they know that what others get they cannot get and vice-versa (zero-sum game).

So, everybody ends up getting as much as they can from the commons and the result is common resources get depleted quickly to the disadvantage of everyone – what Garret Hardin calls the tragedy of the commons.

Shareable and non-excludable goods are best treated as public goods, e.g. parks, national defense, information, etc. People tend to regard public goods as free, accessible and open to anyone. They tend to regard information as public goods.

26 — People tend to treat information like public goods

This open access culture seems prevalent in farms, rural hinterlands and forest areas where the bounties of nature are plentiful. In my visits to coconut farms in my hometown in Quezon province (southern Luzon), I observe passersby picking one of the many fallen coconuts lying around in someone else's property and using it for ingredient in their next meal. This rural behavior is prevalent and seemingly tolerated by private landowners. Many seem to treat fruits in someone else's farm as free public goods. Perhaps the easy reproducibility of agricultural goods has the same behavioral effect as shareability of public goods.

I surmise, too, that when rural people immigrate to Metro Manila, they bring this open-access culture with them which may partly explain their predisposition to “squat” (illegally occupy) in someone else's private property.

Information and knowledge belong to that class of goods which is shareable and non-excludable (or, at best, poorly excludable). This intrinsic property of information and knowledge entails interesting consequences:

- Behavioral – People tend to behave towards any shareable and non-excludable good – such as information and knowledge – as a public good rather than as a private property. People tend to share and copy rather than buy/sell and hoard information.

- Technological – To enforce intellectual property laws and thus maintain incentives for creators of new information or knowledge, technologies for excluding non-owners from the use of proprietary information (e.g. passwords, encryption, restriction on copiers, etc.) would continue to be researched and developed.
- Political – As information and knowledge more and more become the bases for creating new wealth and therefore power, their shareability and non-excludability tend towards more democratic rather than elitist expressions of that power.
- Cultural – As a society shifts towards the information economy, the very shareability of information will tend to move that society towards a sharing culture. A sharing culture is accompanied by assumptions such as giving is not necessarily at the expense of the giver, there is more than enough for everyone, using is more important than on owning, and if we don't exchange, we both lose (positive-sum game).

The prevalent use of information goods is exerting profound changes on how we relate to one another and how we reinvent our assumptions about ownership.

27 — Information goods conduce towards a sharing culture

C4 INFORMATION VERSUS KNOWLEDGE

Two questions I am asked very often are:

What is the difference between the two terms: “information” and “knowledge”?

What is the difference between “information management” and “knowledge management”?

Allow me to quote famous knowledge management (or KM) authors:

*“Knowledge is information **in action**.”*

– Carla O’Dell and C. Jackson Grayson, Jr. in: *If Only We Knew What We Know* (Free Press, 1998)

*“Knowledge is information that changes something or somebody — either by becoming **grounds for action**, or by making an individual (or an institution) capable of **different or more effective action**.”*

– Peter F. Drucker, in: *The New Realities* (Harpercollins, 1989)

*“[Knowledge is] **justified belief that increases an entity’s capacity for effective action**.”*

– Ikujiro Nonaka, *Organization Science* 5(1):14-37 (1994).

*“I define knowledge as a **capacity to act**.”*

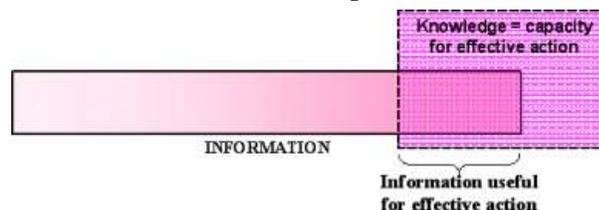
– Karl-Erik Sveiby, in: *“The New Organizational Wealth: Managing & Measuring Knowledge-Based Assets”* (Berrett-Koehler Publishers, 1997)

*“One of the reasons that we find knowledge valuable is that it is close – and closer than data or information – **to action**.”*

– Thomas Davenport and Laurence Prusak, in: *“Working Knowledge: How Organizations Manage What They Know”* (Harvard Business School Press, 2000)

You get the drift?

Knowledge is **capacity for effective action**. It includes information to get things done, to achieve valued results or for creating value.



To quickly and simply grasp the difference between information in general and knowledge in particular, remember that –

Information deals with:	Knowledge deals with:
• Know what	• Know how
• What is	• What works
• Something interesting	• Something useful

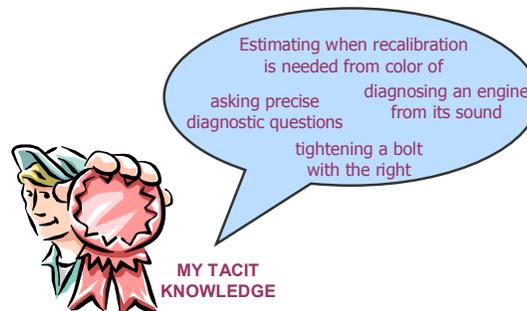
Here are examples of explicit knowledge:

- Manuals
- Technologies, whether hardware, software or “wetware” (i.e. biotechnology)
- Documented best practices
- Course programs, e-learning systems
- Process tools
- Portals and knowledgebases
- Formulas: pharmacy, cooking (recipe), engineering, etc.
- Directories of customers, suppliers and business allies

28 — Knowledge is “high octane” information.

Tacit knowledge is undocumented, unexpressed or unrecognized knowledge embodied in people, embedded in informal work processes or work prototypes, or earned through productive relationships with patrons, partners, suppliers and allies. Here are examples of tacit knowledge.

- Expertise, know-how, work experience in people’s heads
- Undocumented but efficient work processes
- Workable prototypes before blueprint or patent papers are drafted
- “Workarounds” (informal but useful modifications of SOPs (standard operating procedures))
- “Tricks of the trade” and “trade secrets”
- Informal networks: professional, customer, industry
- Informal business alliances and strategic partnerships



In people and organizations, the magnitude of tacit knowledge generally exceeds that of explicit knowledge. There may be several reasons for this. All explicit

knowledge started as tacit knowledge in someone's head, but not all tacit knowledge gets documented or codified. There are many things we can do well but cannot explain or write down: we know more than we can tell. Then, people have a tendency to hoard valuable tacit knowledge.

29 — There is more tacit knowledge than explicit knowledge

Now we can answer the question: *What is the difference between "information management" and "knowledge management"?*

According to Carla O'Dell and C. Jackson Grayson, Jr., *"knowledge management is... getting the right knowledge to the right people at the right time" or "helping people share and put information into action in ways that strive to improve organizational performance."*

KM attends to both explicit and tacit knowledge, while information management can handle only explicit knowledge. You need to first encode knowledge before you can enter it into a computer or print it in a document. Another way to say it is, information management deals with information objects and aims to optimize people-to-information interface while KM is about optimizing both people-to-information and people-to-people interfaces.

According to David Hastings of Computer Associates, less than about 5% of knowledge of an employee is codified and stored in corporate knowledge repositories. That means information management can reach only about 5% of the total knowledge in an organization.

Yet, many managers are biased towards visible or explicit knowledge. KM provides a framework that enables recognition of intangible assets in an organization. Otherwise, we cannot manage what we hardly see. Novelist Marcel Proust said,

"The real voyage of discovery consists not in seeking new landscapes, but in having new eyes."

30 — KM gives you new eyes to see what you hardly saw before

There is another reason why tacit knowledge is more important.

When I was a child, I hardly knew about cars and driving cars. I was not even aware that there is such a thing as the skill of driving a car. Then, when I was in high school, I became aware that I am ignorant about driving (I moved from **unconscious ignorance** to **conscious ignorance**). The desire to drive slowly emerged in me. When I was in the third year in high school, the driver of the jeep that brings me home every day allowed me to handle the steering wheel for a few minutes. I was so excited.

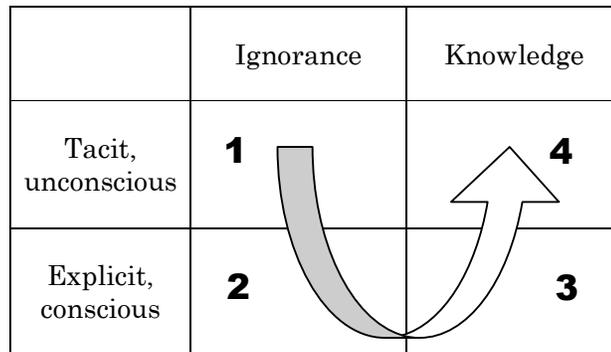
But my opportunity to finally learn how to drive came when I was pursuing my masters degree in the United States and I had to drive several miles to our

laboratory where there are no regular bus lines and it is expensive to take a taxi each time. I hired a lady, a retired US postal delivery woman, to tutor me in driving. It was exciting being able to drive a car over miles and miles of country roads in upstate New York.

Of course, in learning to drive and even shortly after I got my New York drivers license, I was very conscious about where I place each of my feet, what I press, and how far I have to move the steering wheel. I have moved from conscious ignorance to *conscious knowledge*.

That was more than four decades ago. Now I drive without thinking about it. The skill of driving has become second nature (or “*kata*” in Niponggo) to me. I have moved from conscious knowledge to *unconscious knowledge*. Tacit knowledge, not conscious or explicit knowledge, is the highest stage of knowledge!

31 — Tacit knowledge: the highest stage of knowledge



D1

KM TOOLS 1: If I Had a Hammer...

There is a wide variety of KM tools available to KM practitioners. But I have not seen any KM author make a conceptual map or index of these KM tools – something that tells you in a single glance which tool is used for which purpose.

I had the same predicament when I first taught research methods and statistics. There is a bewildering array of research methods and statistical tests. The strange thing is that I have not seen any statistics author make a conceptual map or index of statistical tests, or one for various research methods.

So, I made out for my students a one-page map of research methods and tools, and a three-page index of various statistical tools. I delight in creating conceptual diagrams that convey the essence of concepts and principles in just one sweep of the eye.

That reminds me of a childhood experience. I have seen the wall-to-wall and floor-to-ceiling tool rack of a well-equipped carpenter. It is a delightful sight to behold, especially for someone who, as a child, grew up under a father who was an expert carpenter. Scanning the wide variety of tools and knowing that each tool has very specific uses was an exciting thing to learn as a child.

Teaching a graduate course in Knowledge Management at the University of the Philippines Technology Management Center, I was again in an old familiar situation. I could not find a conceptual map or index of KM tools. Again, I had to produce something for my students.

So, I produced the Map of KM Tools (see next page, reproduced from Chapter A page 8). You can also access <http://www.geocities.com/serafintalisayon/map.html> which contains two identical maps. The second map has links to summaries of nearly 30 articles or book chapters made by my students. The position of the links is related to the type of KM tool the summary is about. This saves you time reading the complete articles themselves.

This page is part of my Technology Management 298 course Web site. Feel free to browse through the site. It is an evolving thing because the course is not yet over. The more substantive term papers will be coming in during September. Please do not expect a complete e-learning package. This course is only a Web-assisted course; it is not a totally Web-based course.

I decided to do it for three reasons: I want –

- to learn basic skills in web construction, maintenance and administration and so get a real feel of what it would be like a professor 30-50 years from now;

Menu of KM Tools

Stage in the Knowledge Cycle	Technically-oriented KM tools	Behaviorally-oriented KM tools
Internal and external sensing	Competitive intelligence, Market survey, Organizational diagnostics e.g. Organizational climate survey, KM system assessment	Customer complaints desk, Recognizing communities of practice, social network analysis
Creating, culturing and capturing	Traditional R&D, Documentation of tacit knowledge, Development of work templates, Codification of best practices, Data mining, Manualization, Purchase/ licensing of IPR	Organizational learning tools e.g. Team Learning and Lessons Learned Meeting, Generative Dialogue; Mentoring and apprenticeship, Buddy system
Organizing, storing, accessing, sharing/ transferring	Intranet and portal, Search engine and automated alert, Knowledgebase, e-Learning, Knowledge mapping, Knowledge network e.g. e-group and discussion list	Community of practice, Help desk, Peer assist program, Cross-visit, Storytelling
Facilitating, motivating, synergizing	Chief Knowledge Officer, Chief Learning Officer, Groupware, Incentive systems e.g. employee innovation program, Royalty	Team Learning including Dialogue, Knowledge champion, Knowledge broker, Visioning exercise, Corporate symbol or logo, Process ownership, Portal ownership
Tracking/ monitoring, measuring, evaluating, managing	Intellectual capital accounting, Learning organization diagnostics, Project evaluation, Post-mortem, After-action report, KM system	Learning history, Process documentation
Using/reusing	Transfer of best practices, Employee performance support system e.g. CRM tools, Role-based portal, Use of process tools/ templates	Action learning, Double-loop learning, Help desk, Peer assist program

- to help my students keep up with class materials 24/7 (that's Internet lingo for 24 hours a day, 7 days a week) because almost all of them are working students, and
- to practice what is preached in KM.

According to a Newsweek article, among the professions that will disappear as a result of the ICT revolution is the traditional teacher. Unless teachers and professors learn new tools and re-engineer themselves, they will soon become extinct or antiquated.

I can anticipate that traditional universities will soon have to learn the KM framework and its teachers and professors soon must have to be familiar with some KM perspectives and KM tools. A number of local universities are moving in the direction of an e-university, such as Centro Escolar University, University of the East, Polytechnic University of the Philippines, Mapua University, University of the Philippines and De La Salle University.

They have to. There are forecasts that in a few years there will be more corporate universities (most of them e-universities) than traditional universities in the United States! The traditional classroom-bound university model may also be heading for extinction.

32 — Threat to ICT-illiterate teachers: extinction

Knowledge management, after all, is supposed to be the business of the academe. For example, it would be embarrassing for professors and tragic for students if more and more people will realize that many of the ideal qualities of learning organizations are absent in their university!

Back to mapping of the wide repertoire of KM tools. I think it is not necessary to know all KM tools, just as it is very wasteful to learn all statistical tools, or all research tools, or all management tools.

It is enough to know three things:

- which specific tool is best for which specific need;
- how to use a few of the more commonly needed tools; and
- how to access information or expertise about other tools if and when the specific need for them arises.

Knowing only one tool can be dangerous. I remember a colleague and friend, who happens to be a creative musician and artist, and a master of paradigms and cultural world views, Professor Felipe de Leon, Jr., saying something to the effect that a carpenter who knows how to use only the hammer will (a) look only for problems that require hammering, (b) tend to force hammer-like solutions to other problems, or worse, (c) tend to view reality as a collection of nails.

We will talk about hammers and many other tools in the next chapters.

D2

KM TOOLS 2: Sharing Knowledge I

In a team or company, there is much unrealized potential for knowledge to create value.

We can see this from two common situations:

1. People often know something useful that others in a group do not know; and
2. The more knowledge is available to the group, the more the group can combine, synergize and create new knowledge; and a third, human factor:
3. Individual willingness to share knowledge varies greatly.

Situation #1 is crucial when many employees or teams perform similar tasks, but their productivities and the qualities of their outputs are very uneven. Benchmarking and exchange of good/best practices are useful in this situation.

Situation #2 is crucial in companies that compete largely by introducing innovative products and doing it quickly. These companies depend on the speed, amount and quality of knowledge shared across functional departments and across members of product development teams.

Situations #1 and #2 are present more or less in every company. How much the company can muster and apply group knowledge to realize business value depends on a human factor: willingness to share knowledge.

Why are people sometimes willing, but at other times and circumstances reluctant, to share knowledge?

33 — Sharing culture = mutual economic benefits

Personal trust. Government personnel commonly hoard information, including non-confidential and public domain information, except from people they personally know and trust. When I was a government officer I built and relied on my personal network of friends in other government offices for obtaining needed documents. My secretary developed personal ties with her counterparts. In group-oriented Filipino culture, knowledge exchange is natural among those who are “part of our group” and not with “outsiders”.

Communities of practice. People who are in similar professions or jobs tend to associate informally with one another to compare notes, share the latest technical developments and gossips, and exchange useful tips and tricks of their trade. Mutual benefit, recognition and socialization sustain these loose “communities of practice”. Although unplanned, unstructured and uncompensated, knowledge sharing happens – a demonstration that hoarding knowledge is not necessarily the “natural” behavior of people.

By-line. In the academe, knowledge sharing is common, but authorship, credit or by-line must go with the knowledge shared and the receiver must acknowledge when such knowledge is quoted or used. The flipside of this academic practice is hoarding knowledge that has not yet been published. In industrial settings, the flipside is reluctance to adopt knowledge developed elsewhere (“not invented here” syndrome).

Monetary or honorific incentives. People tend to hoard knowledge with economic or competitive value. An antidote is employee innovation programs that award a percentage of the net financial impact of the innovative idea. Incentives awarded to work teams will encourage knowledge sharing within, but not across, work teams. In universities, reward systems are individual based, which do not encourage sharing and building group knowledge.

Organizational culture. Modeling by leaders, company policies and ingrained practices affect willingness to share knowledge. Some organizations (see below) adopt knowledge sharing as a matter of policy. But in many others, the overriding priority is production and thus people devote little importance and time for knowledge sharing.

What strategies for knowledge sharing have been found to work?

Larry Stevens reported seven case studies of workable approaches to knowledge sharing (Knowledge Management Magazine, October 2000):

Collective Technologies is an e-business consulting firm in Austin, Texas. Knowledge sharing is an important criterion in hiring. Employee evaluation includes tracking how many times and how quickly an employee answers technical questions posted by other employees in the company intranet, and for the latter, how many times they had posted Q&A summaries for the archive.

Buckman Laboratories, a chemicals company in Memphis, Tennessee, uses a ten-point manifesto to deliberately create a corporate culture. Its employee evaluation system is based on the manifesto, which includes knowledge-sharing activities in the company intranet.

Cap Gemini Ernst & Young, a professional services consulting firm in St. Louis, adopts a three-tier incentive system for knowledge sharing at the executive, department/division head and employee levels. An executive is evaluated according to how many solid business ideas she originated. Royalty points are awarded to an employee each time someone uses knowledge he posted in the company intranet. Knowledge sharing is also an important criterion for promotion.

Harris Government Communications Systems Division is a manufacturer of communications systems in Melbourne, Florida. To reinforce a knowledge sharing culture, they adopted two systems for publicly recognizing those who excel in

knowledge sharing: a Wall of Fame (plaques of awardees placed along the entrance corridor) and a special certificate.

Recognizing that people naturally share knowledge within teams, **Northrup Grumman's Air Combat Systems** of Los Angeles reorganized their technical people so that they are simultaneously members of several teams: functional or department teams, product development teams, etc. Knowledge sharing is encouraged by conferences, classes and mentoring programs within and across teams.

The **World Bank** created more than a hundred specialized voluntary virtual knowledge communities consisting of professionals from many countries all over the world. Technical questions are posted and answers can come from anyone anywhere who may happen to have related experience or expertise. Participation is not obligatory but is driven by personal interest and willingness to share knowledge.

Capital One, a financial services company in Falls Church, Virginia, recognized the talent and interests of a staff member and formalized her role as a Knowledge Champion, who then started to initiate various knowledge management initiatives within the company.

These companies are learning the delicate transition from individual to group knowledge.

D3

KM TOOLS 3: Sharing Knowledge II

Whenever knowledge is re-used, value is created. Tools for capturing and sharing knowledge are among the most useful and popular. Tools differ according to how much tacit knowledge is involved and how easily it can be codified (i.e. documented). On the one hand there are personal face-to-face methods such as peer assist, mentoring and apprenticeship for transferring skills with high tacit content and difficult to codify, and on the other hand there are many ICT-enabled methods for identification, codification and transfer of easily codifiable knowledge.

34 — Knowledge sharing modes:
from face-to-face to ICT-enabled

I was in Bangkok in 2001 with around 50 delegates from 19 Asia-Pacific countries winding up a two-day “Regional Workshop for National Assessments in the Asia Pacific Region.” The workshop was a mechanism for sharing of experiences, lessons, innovations and problems or constraints in the preparation of assessments of national efforts on sustainable development (SD) since the 1992 Earth Summit in Rio de Janeiro. The assessments were inputs to the World Summit on Sustainable Development (WSSD) in Johannesburg.

Knowledge management (KM) is an explicit framework of the workshop. I will use the workshop to illustrate examples of KM tools for knowledge sharing.

Four countries who are advanced in their national assessment processes – the Philippines, Nepal, Mongolia and Pakistan – presented their experiences. The workshop organizers (UNDP and ESCAP) provided for a separate session where sub-regional groupings of countries can exchange experiences of what works well and what are the obstacles.

I chaired a plenary session on sharing of good or best practices and innovations across countries. It was an instructive and productive session where I myself learned about how the widely different political and cultural situations in each country lend themselves to specific appropriate approaches, and how some other approaches are more generally applicable.

The future steps agreed during the last workshop session were recognizably KM tools. They include:

- Continuing exchange and sharing among the countries through the United Nations Development Programme (UNDP) Capacity 21 website;
- Designation of “regional facilitators” familiar with the Philippine process and who can therefore assist other countries either through e-mail or UNDP-funded missions to requesting or receiving countries; and
- Use of interactive websites for augmenting nationwide consultations as part of the assessments process. China has been using this approach.

As one of the designated regional facilitators, I helped delegates from Sri Lanka and Iran on possible steps they can consider which were found useful in the Philippines – an example of “peer assistance,” the KM terminology for horizontal transfer of knowledge with substantial tacit content. We agreed to be in continuous e-mail contact after Bangkok, or pay them a few days visit should the need arise – which Cambodia did a few months later.

ICT-mediated exchange of knowledge in preparation for WSSD is the intent behind the “NCSO Knowledge Network” set up by the Earth Council. The Earth Council is an international environmental NGO set up by Canadian Maurice Strong, who chaired the 1972 UN Conference on the Human Environment in Stockholm. The beneficiaries of the NCSO Knowledge Network are the national councils for sustainable development (NCSOs) that governments agreed to establish during the Rio Summit.

The NCSO in the Philippines is the Philippine Council for Sustainable Development (PCSD), the highest government policy advisory body participated in by NGOs. Its secretariat is the National Economic and Development Authority (NEDA).

In 2000, NEDA asked me to design and prototype an SD knowledgebase for PCSD, with Earth Council funding. Earth Council executive director for the Asia-Pacific region Ella Antonio wants it to be a model for other countries in the region. I suggested to her that the Earth Council consider adding a component on “mentoring” (the KM terminology for vertical transfer of knowledge with substantial tacit content) so that NCSOs from other countries can learn from the Philippine prototype.

The biggest non-government SD knowledgebase is the Philippine Sustainable Development Network (PSDN), which UNDP set up and later spun off as a self-sustaining non-profit foundation. I undertook the pre-feasibility studies and initial design of PSDN for UNDP immediately before the Philippines was linked to the Internet in mid-1994. Now, NEDA had agreed to my suggestion to link the two SD knowledgebases into a close collaborative relationship.

The logic of knowledge networks occupying similar niches is such that if they do not interconnect and facilitate information and knowledge sharing, both will be losers.

A “knowledgebase” is a KM tool for storing and facilitating retrieval or sharing of knowledge among members (see Chapter D12). In addition, the PCSD knowledgebase will enable:

- Interactive consultation of various stakeholders and publics in the process of formulating government policies and positions in SD;
- Communication and consistency or coherence in views and positions among government delegates to international meetings and negotiations related to SD;

- Communication and promotion of SD best practices, both within the Philippines and with other countries;
- Community formation among various SD interest groups; and
- Access to SD information and knowledge through a searchable database.

Facilitating beneficial knowledge sharing is the essential purpose of many KM tools.

D4

KM TOOLS 4: Working with Tacit Knowledge I

Accompanying knowledge management is recognition of the importance of tacit knowledge and renewed interest in tools for transferring tacit knowledge such as mentoring, apprenticeship, visit by an expert team, peer assist and help desks.

Let us examine the following cases.

1. Trauma care in hospitals tends to be multidisciplinary, requiring the right blending of different expertise into an effective process that is best learned from action and experience.

At the Lancaster General Hospital in Lancaster City, Pennsylvania a task force was created to improve their process for handling spinal cord injuries (SCI). The team discovered the importance of knowledge infusion by way of short visits to Lancaster by a multi-disciplinal team of specialists from a regional SCI center, the Thomas Jefferson University Hospital in Philadelphia.

2. In Matsushita Electric Company in Osaka, engineers tried unsuccessfully to design a dough kneading machine. One of them volunteered to study as an apprentice under the chief baker of the Osaka International Hotel. She learned the (unwritten) secrets of kneading dough and went back to help design Matsushita's unique "twist dough" method that set a sales record for new kitchen appliances in its first year of release.
3. Pharmaceutical companies are beset by the long R&D-to-market cycles, in part due to the long process of product testing and getting approval from regulatory agencies.

An executive estimated that his company loses about a million dollars for every day of delay.

A global pharmaceutical company, after having exhausted benefits from sharing of codified knowledge through their electronic document management system, decided to uncover and use previously codified tacit knowledge for further reducing cycle time.

4. An in-house team of best practitioners organized for the purpose was able to reduce filing time (a component of the overall R&D-to-market cycle) from 35 to 18 weeks.
5. The World Bank has set up among the more sophisticated, multi-sectoral knowledge bases to leverage its immense knowledge in development work across teams working in all regions of the globe.

Recognizing that information technologies for capturing, organizing, storing, retrieving and reusing explicit knowledge cannot touch tacit and difficult-to-codify knowledge, the Bank has provided a channel for accessing and transferring tacit knowledge, namely: Help Desks where personal assistance from specialists can be sought.

Ikujiro Nonaka, one of the knowledge management gurus, claims that Japanese firms are better able than Western firms in recognizing, appreciating and managing tacit knowledge. I believe he is right, because he draws Japanese examples that antedate the emergence of knowledge management in Scandinavia and the United States.

I suspect cultural factors are at work here. The Japanese has a long tradition: the *iemoto*, a kind of school run by masters of a craft. In ancient and present Japan, there were/are *iemotos* in crafts like *kendo* (swordplay using wooden swords), *chanoyu* (tea ceremony), *ikebana* (flower arrangement), calligraphy, swordsmith (making the multi-layer samurai sword), *geisha* training, etc. The values and practices in *iemotos* are excellence, loyalty to the *iemoto*, reverence and obedience to the master, perfection, constant practice, personal growth and learning.

Of course, learning in *iemotos* in ancient Japan was largely tacit – not through reading books or listening to lectures the way modern Westerners normally associate with learning and knowledge, but through observation of the master at work and through constant practice under the watchful eye and expert guidance of the master or his more advanced students. I also suspect that *iemoto* values have somehow spilled over to the culture in modern Japanese firms.

May I share with you several thoughts about tacit knowledge.

- All explicit or codified knowledge started out in tacit form in someone's mind, and not all tacit knowledge is codifiable.

Look around the room. Every invention, design, innovation or improvisation you see around you started out as an idea in the head of someone.

Therefore, enabling knowledge creation involves the delicate art of facilitating what is essentially a tacit process.

This may sound strange to those used to thinking about R&D as a formal, explicit process, but this is the central thesis of the book by Georg von Krogh, Kazuo Ichijo and Ikujiro Nonaka. Nonaka argues before his American audience that "knowledge management" is an awkward if not inaccurate term and prefers to use "enabling knowledge creation" instead. By the way, von Krogh is a Swiss.

- Most of what we know exists in tacit form. It is estimated that the fraction of knowledge in an organization captured in databases, libraries and other explicit forms is only about 5% (David Hastings of Computer associates).

The rest is unexpressed, undocumented or unrecognized knowledge in people.

- Because traditional accounting systems do not fully see knowledge assets or even recognize them as assets, managers tend to overlook the importance of knowledge assets as such.
- Apprenticeship and mentoring are age-old ways of transferring tacit knowledge. This is a clear example that knowledge management is only a new framework and that it embraces tools many of which are not new. KM is simply a new way of looking at much the same things.

16 — Tacit knowledge: more essential yet less visible

The absence of a KM framework can make knowledge rather invisible! By the same token, the absence of a cultural or mental model of tacit knowledge – plus the very nature of tacit knowledge itself – can make tacit knowledge really invisible.

30 — KM helps the executive see what he or she didn't see before

One of my students told my knowledge management class the case of a skilled technician in a chocolate candy factory. He alone knows the right smell, color, proportions and timing in the process of mixing ingredients for the product.

When he resigned, the company was crippled.

The management failed to recognize the crucial importance to the company of a rather invisible asset!

D5

KM TOOLS 5: Working with Tacit Knowledge II

Does your business' success depend on retaining workers whose skill come more from natural talent or from years of experience? Do you have employees for whom replacements would be difficult to find? Would your business be crippled if a (or a few) key employee suddenly leaves? Do you have jobs for which formal training is not a good indicator of competence? Do you have jobs for which personality is more important than possession of an academic degree?

If you gave many "yes" answers, you need to manage tacit knowledge in your organization.

"Tacit knowledge" is expertise that is affecting your business results but is unrecognized, unexpressed or unrecorded – and consequently unappreciated.

Not all tacit knowledge can be codified or made explicit. Only after codification (into a manual, work template, training material, formula, computer program, diagram, flow chart, book, etc.) can tacit knowledge become part of an information system, and be an object of information management.

According to David Hastings of Computer Associates, explicit knowledge constitute less than five percent of an organization's total knowledge. The rest is tacit knowledge.

Now you can appreciate why knowledge management is much more than information management.

Tacit knowledge is personal. It is the sole, private possession of its owner. Tacit knowledge is where the human side of knowledge management is best seen.

Much knowledge remains tacit for many reasons. The knowledge worker may not have time to write down what he knows. He may be unwilling to reveal or share all that he knows. You see, codifying tacit knowledge is making publicly accessible what is otherwise private.

The more common reason is the difficulty of expressing in words many things that we know how to do well. We find it hard to think about actions that had become second nature to us. We know more than we can tell.

Catholic Sister Sonia Punzalan, a Zen teacher, noted that my Center colleague, Ms. Babes Afable, who is not a Zen meditator, shows many skills and insights that Sister Sonia observed only in experienced Zen meditators. She wanted to know how Babes does it and asked her to write it down for an anthology she is writing. And so Babes tried to express in words how she "meditates in action".

Sister Sonia also knows that Babes is very articulate, and is amazed at how Babes can well describe delicate nuances in her feelings and being. And yet, Babes had difficulty codifying how she “meditates in action”.

Harvard Professor Donald Schon described precisely this difficulty. He studied the largely tacit ways that experts improvise and create new knowledge (“The Reflective Practitioner: How Professionals Think in Action”, Basic Books, 1982).

Corporate executives are appreciating self-reflection as necessary for organizational learning/correction – and for enhancing, improvising and improving on actions that may have become “natural”.

There is a second difficulty. Listening to Babes does not help me at all in learning what she does. Words are not always an efficient means of transferring tacit knowledge!

Can you now appreciate why age-old methods of tacit knowledge transfer (mentoring, apprenticeship, etc.) are experiencing a revival among knowledge managers? The old methods take on new labels: “peer assist”, “help desk”, “buddy system”, etc.

New exciting methods are being tested and developed for handling tacit knowledge. They involve the delicate elements of human feeling, thinking and relating.

1. My colleague, former Undersecretary of the Department of Environment and Natural Resources Delfin Ganapin advocates importance of “translators” – people with that special skill of translating tacit knowledge of indigenous peoples (IK or “indigenous knowledge”) into an English-language document that mainstream readers can understand.

2. A method we tried is bringing together successful community development leaders to surface among themselves their insights, approaches and experiences – using their own language. In present-day KM language, we convened a “lessons-learned meeting” among “best practitioners” to “codify their tacit knowledge”. The experience of listening and learning from these successful “doers” is most rewarding for me. The University of the Philippines published (“codified”) the results of that meeting. As editor, I entitled the publication “The Doers Talk and the Talkers Listen”.

The best practitioners are the doers, who rarely talk about their expertise. Guess who are the “talkers”? The professors! The professors like me who like to talk and who should instead listen and learn from the best practitioners.

Anyway, my self-appointed role at that time was as a learner and “codifier” of tacit knowledge. We are further testing and developing this KM approach in a project I am currently managing for UNDP on “leveraging best practices”.

3. “Another way of transferring knowledge is through story telling”, remarked Siony Binamira, Knowledge Director of Accenture. Story telling is another technique that KM has given new significance to and is reviving in the corporate arena. Story telling is a powerful way of conveying knowledge that is heavily mixed with feelings, images and sentiments – corporate history and corporate vision, for example.

4. Tonight, over cocktails followed by dinner, I got so much insights (read: tacit knowledge) from Asia-Pacific think-tank CEOs on Washington D.C. politics bearing on China, Taiwan and ASEAN. Storytelling in another guise.

5. And now in the UNDP best practices project, I am bringing in video storyteller Beth Roxas to shoot video vignettes of selected best practitioners telling about themselves and their experiences. Another new twist in knowledge codification.

35 — Managing tacit knowledge is
a new and exciting frontier

Indeed, KM has its exciting human sides.

D6

KM TOOLS 6: Codification, or Making the Invisible Visible

Tacit knowledge is more basic, personal, context-bound and inaccessible than explicit knowledge. Making knowledge explicit renders it public, accessible, context-free and more manipulable into useful combinations.

Codification, then, becomes an important step in knowledge management.

Codification can involve inventing **new words** to convey a new tacit nuance. Teams doing design, R&D or innovation often find themselves inventing new terminologies to capture the sense of an emerging new idea and provide a vehicle for group communication and imaginative thinking. New terms like “ubiquitous computing”, “intelligent house”, “reflective employee” and “learning organization” help communicate concepts that were tacit among those who first found them useful.

Japanese firms even use metaphors and figurative language intentionally to avoid premature fixation or to allow further evolution of an emerging idea or design. When the Honda City model was first being evolved by Honda design engineers, they referred to it as the “Tall Boy” because they knew it would be somewhat smaller and proportionally taller than the popular Honda Civic model. To imitate and convey the way an expert baker prepares dough – as seen and learned by a kitchen appliance design engineer while being an apprentice to the baker – a Matsushita design team called the process “twist dough” method.

The conversion from tacit to explicit knowledge provides a new framework for appreciating familiar procedures such as developing work templates and models, manualization, process documentation and encoding into electronic formats.

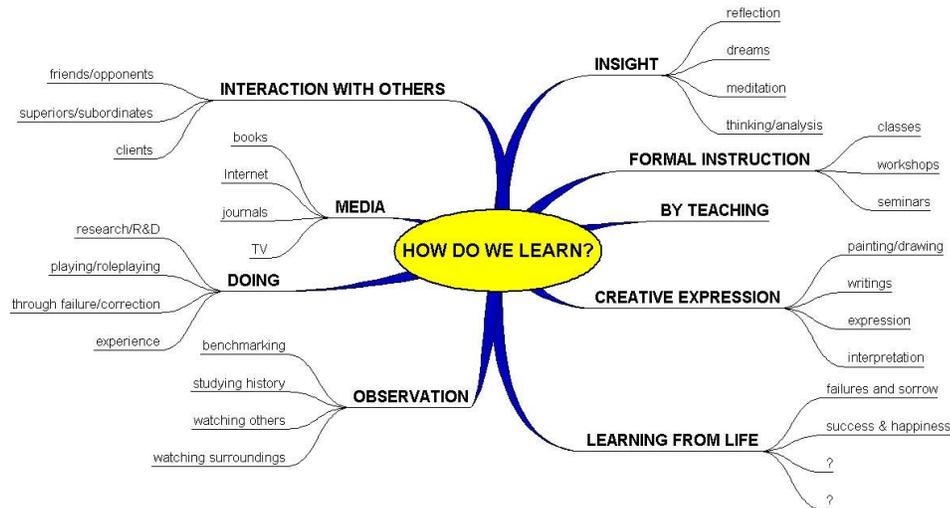
Codification can take the form of **work templates**. Work templates are useful, workable documents or models with embedded experience and skill. They are knowledge artifacts worth preserving for future reuse. Reusing them creates value by saving time, money and expertise.

If you lose your driver’s license, you can approach one of those many sidewalk typists near a Land Transportation Office branch. He will pull off his shelf an Affidavit of Loss form that he quickly fills out after asking you a few questions. This is a simple example of a work template.

Some projects involve specialized steps for which work templates may have been developed elsewhere. If the process is rather complex, the work template may be accompanied by a manual. **Manualization** is another form of codification of knowledge.

Drawing, such as flow charting and **mind mapping**, is another way of rendering explicit what is tacit in the mind of a person or group of people. In a KM workshop,

I asked a group of educational planners and administrators from the Ministry of Education of Malaysia the question, “*How do we learn?*” After their answers were clustered and mapped, the result was the following mind map. It is an explicit representation of the tacit thinking of the group:



Process documentation is another form. It is a detailed description of how a process was undertaken. More than keeping a record, its purpose may be to document who, how and why certain decisions were reached, to track expenses and incomes or to evaluate the performance of every participant. It is useful for evaluative review of what went wrong and what went well, and why.

If a team is a high-performance team, the process documentation seeks to codify their best practices for transfer and reuse by other teams. Process documentation becomes a learning device.

But process documentation of best practice can be a double-edged sword. If it is imposed as a standard of practice which should be strictly followed to the letter by all work teams, rather than regarded as a “living document” open to further improvement, then process documentation becomes anti-learning. Standardization of what is best practice is itself a good practice. But whenever standardization – or any form of codification for that matter – freezes a process, then learning has stopped.

Encoding knowledge for storage in databases entails fitting the knowledge into a structure, format or language. Encoding may include quantification. The structure is designed for organization and retrieval, but the trade-off is loss of information. The basic design rule is: the structure and language used must be determined by how and who will use the knowledge. The reason for codifying knowledge is to facilitate reuse by others, and this applies whether or not we are dealing with printed or electronic codes.

Codification is not always a cut-and-dried process. Because tacit knowledge exists in specific personal and situational contexts, codification requires attention to delicate behavioral factors. For one, the transition from private to group ownership of an idea is difficult without a sharing and trusting culture. For another, the prevailing notion that knowledge is what you get from books and classrooms can hinder appreciation of the subtleties of codifying what is tacit and invisible.

Among some Japanese firms, capturing what is essentially invisible is facilitated by creating an enabling context. This context is called *ba*, which means “place” or “space” in Japanese. *Ba* can be a combination of physical, ideational, virtual and organizational space or context for human interaction. According to von Krogh, Ichijo and Nonaka, *ba* is a space where trust and caring encourage sharing and creation of knowledge within a team or organization.

An example of *ba* is how Maekwa Manufacturing Company senses customer needs as input for new product design. Customers are often unaware of their unmet needs. There is a tacit sense that is rather vague and unarticulated. So Maekwa sends their engineers to develop, over time, committed interactions with customers. This process of developing what Chairman Maekwa calls “*interactions in the world of tacit knowledge*” is allowed enough time to give their staff “*opportunities to participate in the activities in ba*” of their customers.

Chairman Pierre Hessler of Gemini Consulting uses a less gentle metaphor:

“The elusive and personal character of knowledge turns every aspect of knowledge creation into a real fight, and like most wars, this one cannot be left to knowledge military only: the whole organization must be designed and managed for and around knowledge.”

36 — KM task: convert individual tacit knowledge to group explicit knowledge

D7

KM TOOLS 7: Personal and Team Learning

Team learning requires skillful conversation.

Observe the quality of communication and interaction among members of a work team. This quality often shifts back and forth across three unproductive stages (Stages 1 to 3 below).

37 — Most conversations are not learning oriented.

Occasionally, or deliberately as a result of management interventions (such as process review or performance audits), interaction may shift to the fourth stage – the stage where learning starts. The fifth stage – where the most productive team learning can take place – is the ideal.

I am using Pilipino descriptors below in case interested readers want to apply it to the local workplace.

- Stage 1: *Sige na Lang* (or “False Harmony” of William Isaacs³)
 1. *Nasusunod ang mapilit, malakas, may galit o mas mataas and posisyon* (The persistent ones, the strong ones, the angry or the one with the higher position dominates the conversation);
 2. *Sumusunod ang mahina, tahimik o takot* (the weak, the silent, those who are afraid, agrees);
 3. *Sunod-sunuran para lang walang away o siraan* (agreeing for the sake of peace and harmony); and
 4. *Sobra ang pag-iingat at panginigilag*. (too much caution).
- Stage 2: *Kanya-kanya* (or “Argumentative Stagnation” of William Isaacs)
 1. *Tulad ng (1) subali’t wala nang sunod-sunuran o napipilitan at kaya nang manindigan para sa sarili* (similar to Stage 1 but no one is forced to follow and everyone can stand up for his own convictions);
 2. *May debate o pagtatalo at paghahatol: “Ako ang laging tama, lahat kayo ay mali”* (debate; belief that “I am right and all of you are wrong.”)
- Stage 3: *Huntahan* (or Unproductive Sharing)
 1. *Tulad ng (2) subali’t may paggalang, pagbabahagi at pakikinig sa isa’t isa* (Similar to Stage 2 but with mutual respect, team playing and listening to others’ views);
 2. *Walang siraan, pagtatalo, pamimilit at sunod-sunuran lang* (no back-stabbing, useless debate, forcing other to follow one’s stand nor following just to avoid tension);
 3. *Malakas ang kapit sa sariling pag-iisip at paghatol* (clinging to one’s convictions).

³ William Isaacs: Dialogue, the Art of Thinking Together (Currency, 1999)
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- Stage 4: *Pagsusuri sa Labas* (or “Single Loop Learning” of Chris Argyris)
 1. *Tulad ng (3) subali’t handang magsuri, magtanong, mag-aral, matuto at magbago* (similar to Stage 3 but ready to analyze, question, learn and change);
 2. *Nakikita ang mali sa iba at sa labas* (sees others’ faults);
 3. *Nakikita na ang alam niya ay isang bahagi lamang ng mas malaking kabuuan* (understands that what one knows is only part of a bigger whole).
- Stage 5: *Pagsusuri sa Loob* (or “Double Loop Learning” of Chris Argyris)
 1. *Masusing pagmamasid sa sarili at pagsusuri ng sariling pagiisip, damdamin at paggalaw* (careful introspection);
 2. *Nais pagaralan ang lahat, pati sarili* (passion for learning everything, including one’s self);
 3. *Nakikita ang sariling pananaw, kaisipan, paniniwala at paghahatol* (aware of own mindset, bias and assumptions);
 4. *Mahusay makinig at magsuri ng walang paghahatol* (suspends judgment, knows how to listen and analyze well).

The most crucial intervention is helping work team members conceptually grasp, experience and appreciate the personal and group benefits of **internal attention** or **self observation**.

The benefits from use of various forms of KM team learning tools such as action learning, learning-in-action, retrospect and lessons learned meetings are more fully realized when double-loop learning is installed in every member of a work team. Internal attention is the first key to double-loop learning (taking personal responsibility is the second key).

To convey the essence of internal attention, we at the CCLFI.Philippines have been successfully employing a simple exercise based on two hypothetical personalities, Isko and Esbert.

Esbert represents the person whose attention is focused on the external world, on other people and on concepts. Isko represents the person whose attention is focused in his inner world of feelings, emotions, thoughts, motives and actions. “Isko” and “Esbert” had become part of the language and relational meanings among groups who had gone through our workshops.

The journey to productive team learning is a process of facilitating and guiding a work team to consciously shift to the fourth and fifth stages.

Shifting from Stage 1 (“False Harmony”) to Stage 2 (“Argumentative Stagnation”) requires developing:

- ability to express oneself freely and without fear,
- a democratic and open atmosphere,
- removal of any pressure to conform to the group, and
- overcoming fear of conflict.

Obedience to authority and group/tribal conformity are strong values among Filipinos, but these are obstacles to transparency, truthfulness and inquiry. Filipinos, in avoiding interpersonal conflict and open confrontation, would sacrifice the truth and go for what William Isaacs calls “false harmony.”

Shifting consciously from Stage 2 to Stage 3 (Unproductive Sharing) requires cultivation of the following:

- ability to listen to different or opposing opinions,
- respect for others and their views and
- no desire to impose one’s views on others.

Stage 3 is common among close friends and associates. Filipinos occupying the same socioeconomic or politico-administrative status easily move to Stage 3, but quickly shift down to Stage 1 whenever someone with higher status joins the group. Stage 2 is more easily reached by American or European teams, or by people who come from more individualistic or self-assertive cultures.

The first hurdle is moving to Stage 4. Moving to Stage 4 or “Single Loop Learning” requires a willingness to face up to one’s mistakes, to change views and beliefs in the face of facts. There should be a desire to go after truth, or what Nathaniel Branden⁴ calls a “deep respect for reality.” There is awareness that one’s mindset is only a piece in a bigger jigsaw puzzle.

Stage 5 or “Double Loop Learning” is the most challenging but most rewarding. To practice it requires that a person installs a feedback or learning loop in and by himself,

starting with the cultivation of the habits of self-review and self-reflection. There is a desire to constantly check one’s assumptions, to widen one’s perspectives and options, and to discover new things. It requires owning one’s mistakes, and taking responsibility and corresponding corrective action – without needing any external rewards or sanctions, standard operating procedures, or directions from a boss.

The second loop in double loop learning is within the person himself. He reflects, learns and takes corrective action simply because it is for him the right thing to do.

Reflection is the doorway to the personal learning mode. The learning organization emerges when its members have mastered reflective thinking and productive conversations.

38 — Learning: a personal responsibility and discipline

⁴ Nathaniel Branden: *The Art of Living Consciously* (Simon and Schuster, 1997).
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D7a

TEAM LEARNING A: Dialogue

Among the imperatives for knowledge-based corporations is the shift away from hierarchical, command-and-control systems towards horizontal, autonomous and agile teams. Team learning, including the art of dialogue, is an important skill needed for greater productivity, innovation and agility in the new organizational setting.

I was browsing in the Book Warehouse in the Premium Outlet (where you get surprising factory prices and discounts) at Pacific Grove near the famous Monterey Aquarium. I picked up Daniel Yankelovich's "The Magic of Dialogue." The normally \$24 book (Simon & Schuster, 1999) is being sold for only \$9!

Anyway, five pages into Chapter 1 Prof. Yankelovich noted that "*many forces converge to intensify the need for dialogue in business settings*" and proceeded to enumerate them. I decided to buy the book.

Dialogue is a difficult but productive process in team learning. It is a practice in business settings described by various other authors such as William Isaacs and Peter Senge of MIT Sloan School of Management, Deborah Flick at the University of Colorado at Boulder, Annette Simmons of Group Process Consulting and Linda Ellinor of the Dialogue Group.

Yankelovich's list of why "dialogue" is needed in business settings echoed issues I have repeatedly touched earlier:

- the steady erosion of authority and hierarchy in the workplace in favor of flatter organizations;
- the trend toward forming strategic alliances with organizations that bring different corporate cultures, traditions, structures, and even languages to the new partnerships;
- the need to repair the damage to morale that results from downsizing or reengineering, when the need is greatest for morale and motivation to remain competitive;
- the need to stimulate the maximum amount of creativity, innovation, and initiative in coworkers, rather than simply expecting them to obey orders;
- the need to align the entire organization in implementing shared visions and strategies;
- the growing demand by employees for quality-of-life benefits rather than exclusively financial and status incentives; and
- the growing importance of developing a strong customer focus, which requires a better

39 — A KM skill: how to talk and think together

understanding of one's customers.

A group can decide to shift from discussion or debate mode to dialogue mode if many of the following conditions are present:

- no one in the group is clearly the expert on the question at hand;
- members of a group come from various technical or cultural backgrounds;
- the group sees the advantage of getting different or fresh perspectives on an issue; and
- whatever the group decides, consensus and sense of ownership by each member over the decision are deemed important.

Dialogue is very different from discussion or debate, the more common mode occurring in business meetings.

In a debate and in most discussions, people defend their ideas or positions or find flaws in others' ideas or positions. Each one feels his or her idea or position is the right or best one. The process ends when a proponent "wins" by a combination of authority or power, expertise, persuasiveness, verbal support of an apparent majority, or simple voting or raising of hands.

In a dialogue, people start with the aim of collaborating and learning from each other, and building group knowledge. Dialogue depends on people consciously disengaging from the following common habits:

- clinging to or investing their ego on their pet ideas or positions;
- believing that their assumptions are the truth and therefore right, correct and must be defended "to the death";
- unwillingness to put one's assumptions to a reality check, and
- if found wrong, unwillingness to acknowledge a mistake and therefore inability to change outmoded assumptions.

Dialogue is about willingness to discover one's assumptions and place them explicitly "on the table" for all to examine, to be confronted by a new idea, and to see the merits of other positions. Dialogue is about openness and willingness to learn.

The result of dialogue is greater capacity of a group to build on each other's individual insights, knowledge and expertise, expand horizons and meanings, and create a larger "group knowledge" or a solution better than any individual solution. To drive home to people the dialogue paradigm, I use the jigsaw puzzle analogy and say "We each contribute one piece of the jigsaw puzzle. Let's put them all together and try to build a larger picture."

Some of my friends call the process *pagdudugtungan* or "piecing together." The process dies whenever someone comes believing he has the complete and only correct picture, which he maintains is superior to the pieces held by the others.

While debate is an adversarial process of finding “the one best piece,” dialogue is a creative process of “putting pieces together.” Dialogue builds knowledge at the same time that it builds community.

The disadvantages of dialogue are:

- It takes time to develop. The last successful dialogic group I initiated took almost one year, meeting almost weekly. We called ourselves the “Wednesday breakfast group” (later institutionalized into a non-government organization, called: Mamamathala Inc.)
- It requires attention not only to content, but more importantly to process, and not only to cognitive but also to emotional factors — rare skills that are not covered by most university or college curricula.
- It takes commitment and effort to develop the necessary personal disciplines: attentiveness to your premises, truly listening to another person, holding ego in abeyance, awareness of your habitual defensive routines, making your inferences and reasoning processes explicit, etc.
- It is very difficult to initiate where organizational culture or leadership style is autocratic. In two other dialogic groups, one I participated (the *kapatirans* or brotherhood) and the other I initiated (Peoples 2000), the group went into the dialogue mode very easily. In both cases, I attribute that to two factors: both were cross-functional or cross-sectoral and both started with what I can call a “will to community” — an exceptional ingredient more powerful than “shared purpose.”

For me, I can affirm that the rewards are well worth the efforts: learning, creativity and innovation.

D7b

TEAM LEARNING B: Team Composition and Dynamics

A question prior to team learning processes is: is there a team? In other words, is there teamwork or team cohesiveness?

One way to answer this question is to construct a sociogram. In some team development workshops we do, we administer beforehand a paper-and-pencil instrument which measures the depth of communication and power direction between every pair of members of a team. The result is summarized in a sociogram — a simple diagram that shows:

- who is personally close to whom (as well as who cannot get along well with whom),
- if there are groupings or factions, who clearly belongs to each faction, who is the hub (or “star”) in each faction, and how serious is the factionalism,
- who are the networkers (the “connectors” or “glues” of the team), and
- who are the loners (or “isolates”) and are they dysfunctional or simply neutral?

The sociogram reveals many insights about team or organizational ecology that a formal organizational chart does not reveal. It shows the operative informal relationships in a team. It contains much useful information for a new executive that otherwise would take him weeks or months to piece together. You can easily agree with me the practical utility of answers to questions like: Who is personally closest to the CEO (the “influentials”)? Who among the vice presidents is closest (and farthest) from the CEO? Who among the upper and middle management has a direct personal link to a Board member (the “power bridges”)?

A less intrusive and quicker way to answer questions of organizational ecology is via half-hour informal coffee chats (actually semi-structured interviews) with a few informants selected carefully from among the upper to middle management.

The first interview I did as a change management consultant for a CEO is with the lady head of the organization’s training and research unit. I additionally asked a few questions on organizational culture and norms and on leadership styles of top executives. Being research oriented herself, she was so intrigued by the technique she asked me for my interview schedule (the list of key questions).

The answers are most valuable for a new consultant coming in from the outside for the first time and needing to quickly and systematically know how to skillfully “navigate” within an organization’s power hierarchy and “correctly behave” within its cultural context. These answers are almost never found in any formal company documents.

A few days ago, I picked up the June 23 issue of *The Economist*. On page 13 of its insert on “The Economist Technology Quarterly” is an article “Of High Priests and Pragmatists” about how teamwork was enhanced in an R&D team.

According to the article,

“Getting researchers from different fields to work together...is often hampered by...language and culture barriers...”

“...One group developing environment-friendly solvents found that adding a social scientist to the team speeded up innovation...the idea is to analyze communication patterns between the participants and to suggest improvements to make them more effective.”

Parenthetically, this R&D team has a cross-functional and non-hierarchical composition. My experience with teams that worked effectively and generated useful innovations supports this manner of constituting a team.

When members of a team come from a wide variety of technical backgrounds, the tendency is to complement and learn from each other’s knowledge and experiences. Team learning is best when each member knows much of something that the rest of the team does not know.

The experience is mutual, and team members come to respect the expertise of each other. Satisfaction in sharing follows from seeing that your expertise is listened to and appreciated.

I have experienced this kind of satisfaction many times working in interdisciplinary teams. In such teams, diversity of knowledge and views can be clearly seen as advantageous in exploring alternative ways of asking and answering questions, and in complementing, supplementing and synergizing each other’s knowledge. In time, the team evolves an unspoken culture that welcomes diversity of views.

What can destroy teamwork and collaboration is a member who is a “know it all” (in appearance or in reality).

Also, a member who throws his weight (whether political, positional or physical) behind his opinions can poison teamwork. Then, what is actually obedience or obeisance passes for team-playing. And decisions are made or ideas are selected on the basis of loudness or forcefulness rather than of technical soundness.

A team whose members are of about equal rank is, therefore, better constituted to successfully go into team-learning processes.

I interpose a caveat: “groupthink” is a kind of team cohesiveness that is counterproductive. Groupthink can arise from the forcefulness of a McNamara-like personality that brooks no contrary views. It can arise from a group culture that prizes smooth relationships over truth. It can come when a group adheres to identical or similar beliefs about reality. It can come from a group that is composed

of people whose personality types are so uniform that they always agree on issues that suits them.

Groupthink is counterproductive because it is not conducive to processes of reality checking and utility checking.

After true teamwork has been developed, then effective team learning can begin.

40 — Technical know-how, power
and personality affect teamwork

D7c

TEAM LEARNING C: Listening Skills

“I like to listen. I have learned a great deal from listening carefully. Most people never listen.”
— writer Ernest Hemingway

“I make progress by having people around me who are smarter than I am and listening to them. And I assume that everyone is smarter about something than I am.”
— industrialist Henry J. Kaiser

We do some things so often — like eating, breathing and sleeping — we readily assume we know them well. I find this very true with listening.

Teamwork and team learning are casualties when we fail to skillfully listen. Ability to learn comes with ability to listen.

Some barriers to effective listening are: mental and emotional noise, being inattentive, perceptual screens, unwillingness to listen and simply talking too much.

There is much mental noise within us. A mistake I often make is hardly listening to a speaker as I prepare mentally what I’ll say next. My mind likes to interpret, evaluate or argue against what I hear even while I hear (or half-hear!) it. At times, our idea or emotion may be so strong we interrupt the speaker before he could finish.

41 — Internal noise obstructs listening as much as external noise

Many researches on emotional intelligence have shown that success in life and in work is correlated more with EQ than IQ.

The first domain, the doorway to emotional intelligence has been found by Salovey and Mayer to be awareness of one’s emotions. We are normally only half-aware of our emotions. As a result, emotions control us rather than us managing our emotions. We react emotionally with automaticity so many times in a normal day that Fr. Anthony de Mello, a Jesuit priest who wrote a book on “Awareness,” said that most people go through their daily lives as if asleep!

The antidote then is wakefulness and watchfulness of our thoughts and emotions — the first domain of emotional intelligence. I use an analogy: to manage his “emotional horse” or “mental horse” a *kutsero* (coachmaster) has to constantly watch horses. We cannot manage what we are unaware of, and that includes our emotions.

Inattentiveness is another obstacle. It is one of insufficient or misplaced external attention. Our attention may be elsewhere: we notice a person’s clothes, shoes or

hairdo and not what he is saying, or we may be thinking of something else. Something the speaker says may act like a trigger and our mind immediately flies off elsewhere. Something like a *kutsero* who fell asleep and then his horse took over! Perceptual screens are the most elusive and pesky. They are our habitual patterns of seeing and interpreting what we see. They are like wearing colored eyeglasses — the eyeglasses add to or subtract from reality. They may lurk and then spring into action when a particular topic comes up, or when a particular person speaks.

Here are some examples of perceptual screens. They happen to be mine! To discover them took me daily self-observations assisted by enormous amounts of patience discerning patterns and tracing origins:

- Oversensitivity to what I interpret (or over-interpret) as blaming, misunderstanding or misjudging me;
- Discomfort and wanting to leave when negative emotions (e.g. anger) are expressed by a speaker.
- Irritation and tendency to interrupt when I hear hasty generalizations or shaky inferences.
- Tendency to focus or play up the optimistic side of what I hear. Discovering such programmings is the first step towards eventually freeing ourselves from them.

Unwillingness to listen or ignoring what was heard tends to happen in superior-subordinate communications:

- A boss had already formed a conclusion or decision in his mind, so he pretends to listen to a subordinate but all the while he knows he will stick by his conclusion or decision whatever the subordinate says.
- A subordinate may not agree with his boss' facts or reasoning, but because of the latter's authoritarian style the subordinate feels it is safer to keep quiet.

In a team, accurate and complete listening may occur, but what was heard may be ignored or not acted upon because of an unspoken culture among team members not to hurt, embarrass or threaten anyone. In our non-confrontational Filipino culture, "saving face" and being "nice" to each other are preferred over embarrassments in finding out what went wrong or what works better.

42 — Barriers to listening can come from organizational culture

Yet, solving productivity problems at their root causes may require addressing issues that could embarrass someone. In-depth problem-solving meetings are more productive within an organizational culture characterized by:

- openness,
- making our judgments and assumptions explicit for others to examine,
- not taking things personally, and
- willingness to put ideas and assumptions to reality and utility checks.

These are practices in “double-loop learning” described by Harvard Professor Chris Argyris. His article on “Good Communication That Blocks Learning” (Harvard Business Review, July-August 1994) is an eye-opener.

On talking too much, businessman and statesman Bernard Baruch said: “*Most of the successful people I’ve known are the ones who do more listening than talking.*”

The antidote to all five is a simple discipline that takes constant practice to master: internal attention, or the moment-to-moment watching of our thoughts, emotions, feelings and motives.

Listening to oneself is the key to truly listening to others

41 — Skill in listening outside
needs skill in listening inside

D7d

TEAM LEARNING D: Group Ladder of Inference

The scientific method is the most remarkably successful way of creating knowledge that man has developed. One useful method of science that knowledge managers borrow and apply in team learning is the ladder of inference.

Laymen, and more systematically scientists, build knowledge about what works well using the “ladder of inference” — a term borrowed by Peter Senge’s MIT group from Chris Argyris of Harvard.

Skillful use of the ladder of inference by a team is essential in a number of situations in the knowledge workplace: lessons learned meetings, postmortems or after-operation reports, critiques of failures (“what went wrong”), post-project assessments, generating and selecting options or alternative solutions, etc.

The inference ladder among laymen can proceed as follows (with an example in parentheses):

1. Observing (you arrived in your office for work in the morning and as you do, you notice things, people and what they are doing);
2. Selecting data (you observed, *“My boss passed by me without greeting me his usual ‘good morning’”*);
3. Attaching meanings (you say to yourself, *“He must be angry with me”*);
4. Making assumptions (the thought occurs to you, *“His anger may be connected with the negative report that reached the General Manager the other day”*);
5. Drawing conclusions (nervously, you think, *“He must suspect I have something to do with that report; he will surely take it out on me”*);
6. Adopt or reinforce a belief (You explain it to yourself, *“My boss is known to be paranoid and at times vengeful”*). Very often, beliefs influence how we select data and what meanings we attach to the data;
7. Make a decision or take action (*“I am going to resign from this hell-hole of an office before the year ends”*).

The ladder of inference is *“what happens inside our head between what we see and what we conclude.”* In normal daily life, the process happens quickly and unconsciously. We are normally unaware of the process and therefore unable to examine and evaluate each step.

In team learning, the practice is to be explicit about every step in one’s ladder of inference, and to be open to comments, suggestions or corrections from the group. Of course, to be able to do this requires building trust, acceptance of the practice, and awareness of one’s assumptions and beliefs.

On team learning Peter Senge said, *“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 knowledge.”*

This is precisely what happens among the global community of scientific practitioners.

43 — Only an explicit ladder of inference is publicly scrutinizable.

The steps in the scientific ladder consist of:

1. Raw sensing of the world;
2. Perception — (usually unconscious) selective and interpretative seeing;
3. Data — the record of observation (of the world as is, or altered via experimentation);
4. Analysis;
5. Generating or testing new hypothesis;
6. Making conclusions, generalizations or statements with empirical truth-value — the new knowledge;
7. Making consequent decisions or actions — publishing, application, etc.

These steps are remarkably successful in creating the huge corpus of knowledge behind the technological wonders that surround us today. But they have some weaknesses — weakness that team learning can and does remedy. Let me start with three.

- Scientific practitioners still largely ignore data from the world within themselves, except those in disciplines such as psychiatry, transpersonal psychology and phenomenology. The artificial avoidance of first person, singular pronouns in scientific discourse is a symptom. In team learning, however, skills in being aware, clear and open about one's premises, beliefs and doubts is essential.
- In scientific publications, not all raw data are reported and Steps 1-2 are almost always tacit. Even if researchers may be aware how their perceptual screens color their observations, it is not normal scientific practice to report their biases, doubts or expectations in a scientific paper. In team learning, every step of one's ladder is open to group scrutiny. You can ask, "*what did you see or hear that led you to say this?*"
- Corroboration and crosschecking within the community of scientific peers occur only after publication — the last step — and only on the basis of what authors chose to report about Steps 3-6. Corroboration is after, and not during (unlike in team learning), the key inferential steps — except in researches undertaken jointly by a team of scientists. Crosschecking is often based on what is available from written reports except during face-to-face scientific seminars and conferences.

Team dialogue and team learning, including among virtual teams, do not suffer from those weaknesses.

Knowledge management looks into people's assumptions, mental models and tacit knowledge, asks them to be explicit about how they proceeded from "what you see"

and “what you conclude,” and goes through the knowledge-building process in a face-to-face or virtual group context.

Creating a context for fruitful dialogue is a fine skill of a team learning facilitator. Building a team with a balanced assortment of intelligences (intrapersonal, interpersonal, linguistic and logical), a good variety of technical backgrounds, and a mix of personality types right for the function or purpose of the team are the skills of team building in the knowledge era. And software to support this kind of corroborative work have become more and more sophisticated.

We have seen the power of the scientific method in building knowledge about how the world works.

I think we have not yet fully seen the other power promised by knowledge management tools in creating knowledge and realizing superior value.

D7e

TEAM LEARNING E: Personality Types

The composition of a team affects team learning.

A multifunctional, multisectoral or multidisciplinary team of peers is likely to be productive when the work of the team involves complementation such as: design, generating alternatives or options, process review or reengineering, project evaluation, as well as problem analysis or diagnosis

When each team member knows much that others do not know, then team and individual learning is optimum.

I participated many times in EIA (Environmental Impact Assessment) teams. An EIA team typically consists of specialists in varied fields: biology or ecology, geology or soil science, meteorology, hydrology, sociology or anthropology, and economics.

I enjoy working in a multidisciplinary team because I learn much from my teammates. I am exposed to fresh perspectives and my own perspectives are thereby enriched and stretched, and sharing my knowledge while others listen and learn is a reaffirming experience.

Seeking ways to combine and link what we individually know into group knowledge is always a productive process. These incentives sustain the team.

When there is only one specialist in an area, a disadvantage of multidisciplinary teams is that no one from the same specialization can countercheck his technical analyses and opinions. A sociologist or economist may hew towards a school of thought within his discipline, and no one can provide a balancing view from within his own field.

From my experiences with failed team learning situations, I would avoid constituting a team where:

- People with different ranks are mixed (non-peer);
- A member is known as an entrenched advocate of a single kind of thinking or doing, a habitual adversarial or endlessly argumentative type, or has a reliably bad track record as a team member; or
- Two members are known to dislike each other.

Personality type is another factor to consider in forming a team. When team members are aware of their respective personality types and what these mean, productive and mutual understanding and appreciation of each other's differing thinking and learning styles is possible.

A popular typology is MBTI or Myers-Briggs Type Indicator, based on four dyadic Jungian categories of a person's orientation to the world around him:

- E or I: Extraversion vs. Introversion
- S or N: Sensing vs. iNtuition
- T or F: Thinking vs. Feeling
- J or P: Judging vs. Perceiving

There are 16 personality types based on all permutations of the four dyads. For example, my type switches back and forth between INTP (“Life’s Conceptualizer”) and INFP (“Making Life Kinder and Gentler”).

According to a friend, Pia Abuel-Ang of the office of Senator Edgardo Angara, MBTI was taught in her MBA class in London. She described the types as follows.

“**Extraversion vs. Introversion** is preference of how one would like to receive stimuli, or what source of energy one often draws from, i.e. Introverts turn to their inner world for energy while Extroverts are energized with contact and stimulation from the physical world.

“Recognizing at the onset the preferences of team members would allow them to understand the processes that each undergoes. An Extrovert may more easily work with stimuli with no real need to internalize or digest information while an Introvert may want time to dissect information.

“Some people prefer to use the **Senses (vs. INTuition)**, wishing to look at specifics and wanting work with tangibles and facts. On the other hand INTuitives tend to look at the larger picture and to concentrate on many things or ideas at once. Sensates may become frustrated with INTuitives, who may sometime fail to see step-by-step linear progressions. An INTuitive needs a Sensate to help him tidy up and make sure all the t’s are crossed and the i’s dotted. INTuitives have the natural ability for ‘systems thinking’ or the ability to look at the forest, not just the trees. It is not a surprise that 70% or more of shakers and movers in Corporate America are INTuitives.

“On decision making, **Thinkers as opposed to Feelers** would be more objective than subjective. Thinkers would rather concentrate on facts and logic while Feelers would like to concentrate on feelings and emotions, focusing on the impact of decisions on people. In a group, Thinkers and Feelers may have a difficult time in reaching a decision as the two come from opposite sides of the spectrum.

“However, understanding this in the beginning may lessen the frustration in the learning process. The team may seek to integrate these two dimensions which would result in a more wholistic decision taking in consideration both logic and the human aspects of decisions.

“**Perceivers** often take a wait and see attitude to life while **Judgers** often come in with a preconceived notion of the resolution. Judgers are structured and controlled. Perceivers tend to more flexible, responsive and spontaneous. In seeing the difference, one can anticipate a whole set of difficulties and conflicts that can arise in a team situation. Perceivers may be viewed as too laid back by Judgers. While On the other hand, judgers may be seen as too rigid and incapable of change.

Judgers would have more difficult time in team-learning experiences where there is a need to suspend judgment.

“Maximum efficiency of any team effort would be attained if some sort of personality-type assessment is used in the beginning. An introduction to personality types and the dynamics between each type would dramatically decrease the potential conflicts within the group. It would make communication more productive as we avoid reacting to people and see their suggestions or inputs for their own worth.”

For those in the corporate world who are interested in further reading, I recommend the book by Otto Kroeger and Janet M. Thuesen: “Type Talk at Work: How the 16 Personality Types Determine Your Success on the Job”.

D7f

TEAM LEARNING F: Double-Loop Learning

Single-loop learning — where actions are corrected after monitoring their results — is common and easy.

Double-loop learning — where underlying premises, motives and attitudes of each one are also surfaced and corrected — is unfamiliar and difficult territory for many work teams.

The more significant learnings that yield dramatic improvements in business productivity are out of the reach of many work teams because they are unable to perform double-loop learning.

Prof. Chris Argyris of Harvard, who observed how learning takes place (or how it fails to take place) in many workplaces, describes double-loop learning in his article “Good Communication that Blocks Learning” (Harvard Business Review, July-August 1994):

"In the name of positive thinking...managers often censor what everyone needs to say or hear. For the sake of 'morale' and 'considerateness,' they deprive employees and themselves of the opportunity to take responsibility for their own behavior by learning to understand it. Because double-loop learning depends on questioning one's own assumptions and behavior, this apparently benevolent strategy is actually anti-learning.

"Admittedly, being considerate and positive can contribute to the solution of single-loop problems like cutting costs. But it will never help people figure out why they lived with problems for years on end, why they covered up those problems, why they covered up the cover-up, why they were so good at pointing to the responsibility of others and so slow to focus on their own."

Learning is a corrective feedback process, a closed loop. In single-loop learning, the steps in the loop normally involve many people in the workplace.

Double-loop learning additionally requires something unfamiliar and difficult from each person in the workplace: a corrective feedback process or learning loop within himself. Each worker observes what he does or does not do in the workplace, uncovers why (his own assumptions, motives, attitudes and beliefs), and takes responsibility for them by appropriate actions.

For example, if a worker sees something wrong or thinks of a better way of doing something but cannot bring himself to tell the manager for some reason, then no double-loop learning takes place. Or, if a new manager senses a minor flaw in set work procedures but is hesitant to “rock the boat,” his inability to act as well as his inability to see the reasons behind his hesitance kill double-loop learning.

If the minor flaw happens to be identified and corrected via a subsequent TQM program, then only single-loop learning took place. No deeper double-loop learning took place because the reasons behind the new manager's inaction and hesitance remain unknown and therefore unresolved — invisible reasons that will continue to hamper overall company productivity growth.

MBA programs teach students how to manage other people, but not how to manage themselves. As a result, graduates are skillful in watching and analyzing external events and other people's behaviors, but they are woefully untrained in watching and analyzing events happening within themselves. They see and skillfully manage the external world of systems, organizations, processes, resources and people. They hardly see and therefore are less capable of managing their own internal world of defensive reactions, ego investments, pet ideas, biases, likes and dislikes, mental models, childhood issues, perceptual screens, etc.

That is why the first module in all our team development workshops is an exercise in recognizing, practicing, understanding and appreciating "internal attention" or "self-observation". Double-loop learning in a team requires installation of a new habit within everyone: monitoring why one does what he does (or what one does not do) and taking responsibility and appropriate action for what one discovers.

Self-observation is the doorway to self-management. That doorway is only ajar for many.

Since I learned internal attention and self-awareness in 1979, constant daily practice opened that door wider for me for a number of subsequent self-management skills necessary for double-loop and other team learning processes, such as:

- not taking things personally — disinvesting one's ego from what would otherwise be "pet ideas" defended "to the death" in the workplace;
- awareness of one's assumptions, interpretations, mental models and the intermediate steps in one's "ladder of inference", and being open and explicit about them before the rest of the team;
- openness to new perspectives and ideas, including the willingness to admit that one's idea is wrong or inferior based on reality or utility checks;
- control over one's otherwise automatic defensive reactions; and
- moment-to-moment awareness of one's emotions and motives, and the consequent skill to make conscious choices about them — which is basically what psychologists call "emotional intelligence."

Aristotle must be a practitioner of emotional self-management because he wrote in the *Nicomachean Ethics*: "*Anyone can become angry — that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way — that is not easy.*"

Incidentally, Aristotle was the mentor of the young man who conquered most of the Mediterranean world and western Asia: Alexander the Great.

Argyris concluded his article by saying:

"Today, facing competitive pressures an earlier generation could hardly have imagined, managers need employees who think constantly and creatively about the needs of the organization...To bring this about, corporate communications must demand more of everyone involved. Leaders and subordinates alike — those who ask and those who answer — must all begin struggling with a new level of self-awareness, candor and responsibility."

Indeed, the doorway to productive team-learning is self-awareness.

D8

KM TOOLS 8: Productive Conversation

We all engage in conversations many times a day. It is so common, many tend to think they know how to engage in a good conversation.

“Managing Conversations” is an entire chapter in the book, “Enabling Knowledge Creation,” by von Krogh, Ichijo and Nonaka.

Surprised?

According to Prof. Krogh et al. *“good conversations are the cradle of social knowledge in any organization... (which) allows for the first and most essential step of knowledge creation: sharing tacit knowledge within a microcommunity.”*

The art and technology of conversation seems to be emerging as a new discipline. The Massachusetts Institute of Technology established a Dialogue Project under William Isaacs, which seeks to understand and develop ways of productive group communication in organizations, especially in business and government. Dialogue is an important process being studied and developed by the Society of Organizational Learning.

Shared problem solving by R&D teams is an art and technology of “creative abrasion” according to Prof. Dorothy Leonard⁵ of Harvard Business School, which consists of managing the interaction of a team, whose members differ in specialization, cognitive styles and methodological preferences.

The significance of good conversation goes beyond knowledge creation.

The global problems we see starkly from events triggered by the September 11, 2001 terrorist attacks are indictments that people and their leaders have not learned how to talk together.

The consequent failure to understand each other may lead to the fulfillment of the controversial thesis of Prof. Samuel Huntington, namely: that the end of the Cold War will usher in a new form of conflict, the “clash of civilizations.”

A few days back, I was watching a CNN forum about issues related to the September 11 attacks. Participating in the forum were an Islamic professor, a Protestant pastor, a Jewish rabbi, a Bible-based Christian minister and a New Age author.

I noted and listed the following types of communication behavior:

- stating a position or fact, with various shades of emotion or feeling;

⁵ Dorothy Leonard: *Wellsprings of Knowledge, Building and Sustaining the Sources of Innovation* (Harvard Business School Press, 1998).

- criticizing the position or belief of another;
- insisting his belief is the correct one;
- taking offense at what someone said;
- respecting the position of another;
- proposing a solution;
- challenging the feasibility of a proposed solution;
- seeking common ground;
- attempting to see another’s perspective; and
- studying mindsets.

The forum was a mix of skirmishes and “talking across” each other. In short, there were some attempts at dialogue. But, by my definition, it was not a dialogue.

If indeed civilizational divides are threatening the security and stability of the planet and its inhabitants, I am afraid we still have to learn the science and art of talking together. (By the way, it is ironic that Year 2001 has been declared by the UN General Assembly – following the proposal by President Khatami of Iran – as the Year of Dialogue among Civilizations.)

Harvard Professor David Bohm, in his book “Changing Consciousness,” said

“Suppose we were able to share meanings freely without a compulsive urge to impose our view or to conform to those of others and without distortion and self deception. Would this not constitute a real revolution in culture?”

44 — Civilizational divides: symptoms of failed conversations?

In Chapter D5 back we looked into how the quality of communication in a group can be arranged into five stages, the last two being the productive stages where learning can take place. Communication in Stage 4 and 5 can be managed guided by a simple 2x2 matrix.

	Inquiry mode	Decision mode
Individual focus	Step 1	Step 3
Team focus	Step 2	Step 4

The mode in team learning generally proceeds from inquiry (getting and checking the facts, generating options, creating ideas) to decision (evaluating and making conclusions or choices).

The goal in inquiry mode is the truth, and the goal in decision mode is action or results. The focus generally proceeds from individual to team. Hence, the general flow is from Step 1 to 4 in the 2x2 matrix. The facilitator of a team learning process possesses skills such as awareness of process, mode and focus; sensing and working with or around blocks; and creating an enabling environment for productive interaction.

Steps 1 and 2 together can constitute dialogue. Here, team members seek a consensus on facts. Dialogue requires suspension of judgment and advocacy, trust among team members, willingness to examine alternative viewpoints and facts contrary to one's beliefs, and openness to new possibilities. Dialogue includes reality checks, cross validation of perceptions, inquiry into premises and construction of a consensus or shared reality.

The purpose of dialogue may not be to reach a decision but simply to:

- explore and understand an issue;
- form a collective synthesis that embraces satisfactorily the varying facts, perceptions and viewpoints of the group; or
- chance upon a new option, creative framework or different paradigm that changes how the group sees an issue or dissolves what they thought was a problem.

Together, Steps 3 and 4 constitute a group process of constructing a consensual ladder of inference. The result is a group conclusion or decision that is based on the collective knowledge and best judgment of the group. It is the result of inquiring, thinking and judging together. It is the best prelude to acting together.

The process can be mired. Because of personal issues, blocks and mindsets, it can be stuck at Step 1 (a monologue) or at Step 3 (debate or fiat). If Steps 1 and 2 are ignored or hurried through to jumping to Steps 3 and 4, the process degenerates into a caucus.

The aforementioned discussion is a quick and simplistic way of conveying the fact that team learning is a technology and an art.

Conversations are extremely common, but productive conversation – the result of system and skill – is less common among people or leaders.

D9

KM TOOLS 9: Power of the Third Kind

Japanese folklore says there are three kinds of power, symbolized by the sword, the diamond and the mirror. The sword symbolizes force: physical, military or political force. The diamond symbolizes wealth or resources. The mirror symbolizes the most powerful of the three.

I demonstrated the process of team learning before high school teachers of La Salle Greenhills. As part of their Social Science Week, they invited a speaker each day to talk about various aspects of the September 11 Event.

I talked about implications for education. No, I did not really give a talk or lecture. More accurately, we – teachers and I – explored the issue: what can we learn from the event? More precisely, what are the root-causes of the event?

I first explained the two basic phases: inquiry followed by decision (see the previous chapter). I stressed the importance of not mixing up the two modes, which means every participant must watch his or her thoughts and statements and constantly check what mode they are in. Mixing the two is unproductive. We cannot jump into judgments too soon or before we have collected and examined as much facts, possibilities and options as the group can collectively muster.

Said Fr. Anthony de Mello, in his book “Awareness: the Perils and Opportunities of Reality” : “...*what you judge you cannot understand...if you desire to change what is into what you think should be, you no longer understand.*”

Suspending judgment is essential in the inquiry phase, but in the decision phase consensual judgment – if it can be reached – is the essential prelude to team action. I performed two roles: as resource person (offering content) and as facilitator (guiding group process). It provided a good opportunity for me to demonstrate conscious role-changing as I go through the physical motion of “switching hats” before I say something in another role.

The inquiry phase proceeded very smoothly from individual to group focus. This is the result of choosing an issue that involves actors external to the group. In team learning, the issue often involves the group members themselves as actors, and thus personal issues and defenses can and often block collaborative inquiry. The most common problem in this group was the unconscious shift to personal judgments during the inquiry phase – something I point out immediately to illustrate the point.

The other problems I saw were: making careless generalizations, cross checking facts, using labels that beg the issue or borders into judgment, and distinguishing symptoms from root cause.

As facilitator, I had to clarify what a speaker means in using a word or phrase, ask what is the premise behind a statement, or summarize the essential points of a speaker who tends to ramble. Most of the time after I made a facilitator intervention, I follow it up by briefly describing or naming my intervention – a heuristic tool to illustrate how a facilitator guides a group process.

The results of the group inquiry were as follows.

- The US government's actions, so far, seem to indicate that it is addressing only the symptoms;
- US policy on the Israeli-Palestinian issue has not been even-handed since the state of Israel was created by the United Nations half a century ago;
- The US government does not seem to indicate that it can see, or fully see, the pain felt for decades by Muslims and Arabs who empathize with the predicament of the Palestinians and that this pain contributed to the behavior of the terrorists (a teacher preferred to use the term "so-called terrorists");
- The possibility that the US government will address the root causes at some later stage remains, or Americans will ask "What acts did we do in the last decades that contributed to the problem?"
- The US government's actions ("bully" was the label used by a teacher) belong to the same violence mindset as the terrorists;
- The bombing of Afghanistan increases the pain of the Muslim world, and may be exacerbating the problem;
- Belief in violence sanctioned or justified by religion (or God) is dangerous for the overall security of the planet; and
- It is likely that the terrorists' choice of targets reflect their judgment of the two evils of America: military power and financial power.

On the last point, I briefly put on my "resource person hat" to say – heuristically again – that ascribing a judgment to an external actor is classified as an act of describing or estimating facts and, therefore, proper during the inquiry phase.

Finally, in the decision phase, we concluded that:

- All parties should learn how to respect each other, no matter how different are their beliefs;
- Reflecting on your own beliefs and mindsets is an important skill for teachers and for education; and
- Reflective individuals are essential in learning organizations.

That brings us back to the third symbol, the mirror. According to the Japanese folk wisdom, the most powerful of the three is the power of self reflection and self knowledge. A man with the powers of the sword and diamond can be dangerous to others if he does not have the power of the third kind, the power of the mirror. The third power is not about winning. It is not about conquering someone else but yourself.

America is already the world superpower and a great financial power. We hope America will acquire more of the power of the third kind. On this may depend

America's moral leadership and our collective planetary fate as a secure and stable mosaic of civilizations.

45 — Civilizational divides: results of disabilities in self-reflection?

D9a

THE REFLECTIVE EMPLOYEE

A: Mastering Yourself

The reflective employee is the essential counterpart of the learning organization. To become a learning organization, the first discipline is personal mastery. And to achieve personal mastery, the first skill is reflection.

In 2002, the BusinessWorld Online launched its BNEXT online lecture series at Ateneo de Manila University.

By way of giving advice to management students from his experiences as entrepreneur, the first slide of the first speaker, Robert Kelvin Y. Kuan, COO of Creative Dining, says: “Master yourself”. After he finished and took his seat, I congratulated him and whispered “you just gave me an idea for the next series in my BusinessWorld column”.

After surveying the rapid changes in e-commerce, one of the transparencies of another speaker in the series, my friend Carol E. Carreon, CEO BayanTrade then, says: “Continue to reinvent yourself”.

She knows whereof she speaks. Remember that Carol started Megalink, which uses a technology for customer interoperability among various banks’ ATMs. After briefly in BIR to help establish its information system, she has moved on to develop the biggest (transactions now approaching 6 billion pesos yearly versus over 200 million pesos of the nearest competitor) e-commerce trading community in the Philippines.

How on earth do you start to “master yourself” or “reinvent yourself”?

I keep complaining that many business schools and professors teach students how to manage other people, systems and resources but not how to manage themselves. An exception I know: Dean Ed Morato of AIM.

This morning after a lecture on Learning Organizations at the Asian Social Institute, the Philippine executive of an international funding agency approached me and said, “We tried team learning and productivity circles. After a while with these methods, you reach a limit.”

“That is precisely why Harvard Prof. Chris Argyris recommends double-loop learning,” I answered.

I mentioned earlier about double-loop learning in connection with team learning and on learning how to learn, but this time allow me to approach this important personal life skill from a feedback loop perspective.

Most learning is a corrective feedback loop process. In most organizations, the learning cycle proceeds as follows:

1. Staff undertakes an activity
2. A report is submitted
3. Manager reads report (monitoring) and evaluates
4. Manager makes necessary corrective decision and
5. Issues a memo or verbal order
6. Staff makes required changes in activity

This loop is simple and very common. It is a vertical loop. Learning or new knowledge occurs with the manager, the boss. The staff merely obeys by changing their behavior.

46 — Top-down management is a single vertical feedback loop.

Team learning – which happens in quality assurance circles, productivity improvement circles and TQM teams – is also a feedback loop. It occurs among peers in a team – a horizontal process:

1. Team undertakes a group activity.
2. A review is undertaken, using a formal review process and/or a lessons learned meeting.
3. Team evaluates the facts.
4. Team identifies the lessons learned: mistakes or what went wrong, what went well, why, etc.
5. Team codifies their consensus and agreements, which provides guidelines whenever
6. Another or same team undertakes the same or similar group activity.

47 — Team learning creates many horizontal feedback loops.

However, team learning is still single-loop learning. Many things cannot be altered or managed in single-loop learning cycles – things that remain largely unseen.

In addition to single-loop learning whether vertical or horizontal, a learning loop is also installed within each employee, then double-loop learning is present. The individual learning loop proceeds as follows:

1. You reflect, observe and monitor yourself. This is a constant moment-to-moment awareness that is slowly sustained through constant daily practice.
2. You evaluate what you see: your behavior or actions, then as you get better, your patterns of behavior, then with more data and insights about yourself you move to examining your mental models and assumptions about people and things, and finally your basic motives and values.
3. You decide to change. Or, it often happens that your awareness or ability to catch one of your behavior patterns in operation takes away

the power of those patterns to control your behavior! Unawareness allows automatic patterns to govern you. Awareness bestows you with conscious choice. Take your pick.

4. You learn. You construct better mental models. And so you see many things you never saw before. You change old behavior patterns. You are reinventing yourself!

48 — Personal reflection creates an internal feedback loop.

The basic assumption one has to throw away is that you know yourself. Since I learned self-observation two decades ago with the help of colleagues such as actress Tita Muñoz, ecologist Nicky Perlas and his psychiatrist brother turned Zen master Tony Perlas, my experiences taught me this: I do not really know much about me. There is a whole new world inside ourselves waiting to be discovered!

My assumption is: you cannot manage, change or reinvent anything – including yourself – if you cannot fully see that which you wish to manage, change or reinvent. Another assumption is: under proper conditions others can be of much help but ultimately, you alone can best see and manage yourself.

So, if you do not see much about yourself no wonder you cannot change many things about yourself. No wonder there are limits to management techniques like TQM, quality control circles and productivity improvement circles that hardly touch numerous unknowns within each individual.

49 — Personal reflection: doorway to self-mastery.

We have much to cover ahead about the reflective employee in the context of a learning organization.

D9b

THE REFLECTIVE EMPLOYEE

B: Take your bearings

The employee who can survive big changes and challenges is the employee who takes her bearings often.

The knowledge economy is like a different terrain from before. We need a map and tools to determine where we are. This terrain is different.

- It is fast-paced, driven by rapid rates of technological change, convergence and obsolescence;
- The crucial asset for creating wealth is less and less capital and more and more knowledge embodied in people, processes and partnerships;
- Networks, relationships and alliances are more important.

At the BNEXT lecture series of BusinessWorld Online before business management students of the University of Asia and the Pacific, I talked about "Future of Careers and Businesses."

I stressed that the new economic terrain demands new aptitudes from a knowledge worker if she is to better survive:

- She learns continuously. She is ready to learn new skills and master new technologies in her profession as they emerge, including through self-study.
- She is ready and flexible to adapt to changes. Changes or threat of changes are met as challenges rather than with fear and paralysis.
- She is less career-bound; she takes proactive and personal responsibility over her career path including changing careers if needed. She is highly re-trainable. Enriching her knowledge replaces job insecurities.
- She seeks to broaden her knowledge and skills rather than remain in a narrow specialization.
- An aptitude for improvisation and work improvement, innovation and "out-of-box" thinking will serve her well.
- She is able to work in teams, network with other people and handle human and interpersonal relationships with emotional maturity.

At the bottom of all these aptitudes is one skill: taking your bearings often. In a fast changing environment, it pays to ask oneself: Where am I now? What should I do that I am not doing? Why do I keep doing what I am doing? Is the direction I am heading still valid or do I need to make a "course correction"?

We tend to forget taking our life and career bearings. For the captain of a ship, that would be disastrous. It may take an unexpected event to push a person to take his life bearings: sickness, a crisis in work or relationship, a property loss. That sounds like a captain taking his bearings after the ship is aground!

I am reminded of a study led by Cornell colleague Dr. Patricia "Tati" Licuanan for the Moral Recovery Program, which found that many Filipinos are short on self-reflection.

Self-mastery begins with self-reflection.
Self-reflection begins with learning to
control attention.

50 — Control of attention: doorway
to personal reflection.

Attention is like a flashlight in your hand. You can point it anywhere. Most of the time people point their flashlights outside themselves. Take this very moment. As you read, your attention is on these words (printed or on the computer screen). If the telephone suddenly rings, you shift your flashlight to the telephone and to the person calling. During the call, your thoughts may shift to a third person and then back to the caller. Or, a fleeting emotion may be triggered, but you are only half-aware of it because your flashlight is pointed elsewhere outside yourself.

People I give workshops to always agree that during workshops, lectures or meetings, random thoughts often grab their attention away from the speaker for seconds or minutes, until they "come to" and resume listening. Absent-mindedness is tantamount to the flashlight taking control of the person. Attention is literally "grabbed away".

My other analogy is a *caretela* (horse-drawn carriage). If the horse is like the mind, then absent-mindedness is like the *kutsero* (carriage master, meaning ourselves) falling asleep and the horse taking over control!

My wild guess is that close to 99% of the waking moments of an average person is spent with that flashlight not in his conscious control and habitually pointing outside. Very rarely is it intentionally pointing inward.

By internal attention I mean a moment-to-moment, expansive and non-judgmental awareness, a watching of your world inside as you go about performing your daily actions with equal alertness outside.

What are the tools for mastering internal attention?

One way is to close your eyes (to cut off external visual stimuli) so you can learn to better focus on your thoughts and feelings. Taking a deep breath or sigh and speaking more slowly and deliberately can help you get out of an emotional roller coaster. Once an emotion is seen, naming it is creating a handle on the emotion. For example, say mentally or aloud, "there is irritation in me". Write it down even. Dis-identifying from and objectifying an emotion makes it easier to manage.

If internal attention is not yet habitual, then you can start by a daily "examen" in the evening where you review, reflect and derive lessons from your experiences of the day.

Sometimes a book can skillfully trigger self-reflection on the part of the reader.

A very entertaining, readable and eye-opening little book I recommend to you is Spencer Johnson's "Who Moved My Cheese?: The Amazing Way to Deal with Change in Your Work and in Your Life" (Penguin Putnam, 1998). By telling a cute story about four unique characters (two mice and two little people) and their behavior patterns, readers are gently nudged to reflect on their own behavior patterns.

Read the book and write down your self-observations.

D9c

THE REFLECTIVE EMPLOYEE

C: Mental Models

Team learning requires that each member makes explicit his assumptions and inferences. The ability to surface mental models is an important skill in the art of building group knowledge.

Have you met a team whose members' individual IQs exceed 130 but whose group IQ is below 70? Peter Senge offers an insight: *"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 [read: group] knowledge."*

Team learning involves the art of inquiring and deciding together. It is learning to think together – the best prelude to acting together. It means making public what goes in one's mind when one thinks and decides privately. How is that done?

The "Left-Hand Column"

Let us perform a "thought experiment".

Imagine four people – a logger, an entomologist, a civil engineer and an anthropologist – in a forest to conduct studies. Having different mental models of a "forest", each will see and think differently. Their individual thoughts may be about:

- Logger: cubic meters of timber per hectare, diameter a breast height, pesos of gross revenues per hectare (The forest is a very interesting place for him.)
- Entomologist: pupa and chrysalis, spider web, anthill
- Civil engineer: elevation, slope, streamflow, hydropower potential of a waterfalls
- Psychologist: (The forest is boring to him. So he may opt to study the behavior of the first three!).

51 — Our mental models control
how and what we see.

Imagine further that they are recruited into a team to solve a forest problem, say, formulating a site-specific development strategy, then they must "put their heads together" and that includes surfacing and reconciling their mental models and development biases. This is where the "left-hand column" comes in handy.

In the language of the Fifth Discipline, a record of what was said and what happened is the "right-hand column" (examples: minutes of a meeting, notes of a news reporter) while a record of the corresponding thoughts that went through the writer's mind is the "left-hand column".

Writing these down enables a team member – and the rest of the team – to examine those thoughts.

“Out of the Box” Thinking

Creativity and innovation require the ability to think outside one’s usual mental boxes. The problem is that people are normally unaware of the many mental boxes that delimit their thinking.

When you see an innovative product out in the market, you may exclaim: “*Now, why didn’t I think of that before?*” Well, you couldn’t because your mental box literally “boxed you in”. The innovation exposed your mental box, the same mental box that the innovator freed himself from, and cashed in on it well before everyone else did.

52 — We are usually unaware of our limiting mental boxes.

Another helpful cue to seeing your mental boxes comes when someone says something that, to you, seems funny, crazy or wrong. Or when someone criticizes you.

Referring to the events after September 11, Iranian President Khatami said: “*Two superficially opposing voices are heard in America and Afghanistan, which in fact are the two sides of the same coin... One says whoever is not with America is a terrorist and the other says whoever does not accept this behavior is an opponent of Islam and a proponent of America... Such false and arrogant judgments are the root cause of violence and terror as well as war.*”

President Khatami’s thinking is out of the box that seems to imprison the thinking of both President George Bush and Osama bin Laden.

So, when you hear a criticism, or a statement that seems ridiculous, or anything that seems wrong or crazy, hold your horses! Don’t pass up an opportunity to discover one of your mental boxes.

A hidden assumption among many is that the mental model is reality itself. Especially when accompanied by investment of ego, a challenge to that belief is met by automatic (read: unthinking) and often emotional defense mechanisms.

Self-Images and Mental Fences

Defense mechanisms can poison anything from ordinary coffee conversations among acquaintances to business meetings and important diplomatic negotiations. The more powerful of these defense mechanisms are those people had set up to protect their self-image, or to maintain the boundaries and mental fences that they had set up between themselves and others.

So, the next time something bothers you, pay attention! There is a learning opportunity somewhere there. But do not start by blaming whoever or whatever bothers you. They are merely triggers. Start by looking at your assumptions about yourself, your role or your work, or how you set yourself apart from other people.

Our mental models are constructions. And we had little conscious participation and choice when they were being constructed – by parents, teachers, bosses, peers. While lurking unnoticed, they shape how we view and react to the world around us. They influence how we think and make decisions. And they can also engender problems.

Gregory Bateson said, *“The problems in the world stem from the difference between how we think and how the world works.”*

Echoing the same wisdom, Syrian cosmonaut Mohammed Fares exclaimed, *“From space I saw Earth – indescribably beautiful – with the scars of national boundaries gone.”*

In the same vein, Peter Senge said, “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.”

The first step then: surface your mental models.

53 — An essential 21st century
skill: surfacing our mental models.

D9d

THE REFLECTIVE EMPLOYEE

D: Changing Beliefs

Unlearning outworn beliefs and mental models is a difficult form of learning.

Like people, beliefs have a tendency to self-preservation. When confronted by new information, a common automatic reaction of people is to compare it with their existing belief system. The new information is accepted if they conform to their beliefs. Otherwise they are doubted, ignored or rejected.

I once spent an hour with an executive who kept arguing that book value is the only correct and solid basis for valuing knowledge-based companies. I told her that many efforts are underway to develop new measures of intellectual capital to supplement financial measures. The emerging consensus, I said, is that intellectual capital embraces three parts: knowledge embodied in employees (human capital), knowledge embedded in work processes (structural capital) and knowledge earned from partners, customers and suppliers (stakeholder capital).

She insisted that management accounting is sufficient for tracking all assets.

She did admit that when a privately-held company is being acquired, due diligence processes involve other measures of value. I told her that large market-to-book ratios (exceeding 10:1) of knowledge-based companies listed in stock exchanges are viewed as indicators of large magnitudes of their (intangible) knowledge assets – assets completely missed by traditional accounting methods. She dismissed market values as often overblown and unreliable expectations of future earnings. She cited Enron as illustrating her point.

I told her that market-to-book ratios even of ordinary U.S. companies have been increasing steadily since mid-1980s and that lately they average 5:1 (Note: the average for all companies in the Dow Jones index is 5.3 in 1997). She refused to believe the data.

“Book values are correct”, she said. “Book values are correct but incomplete”, I countered. “No, no.” She refused to give in.

Looking back, my mistake was to be drawn into an argument. Arguments rarely can succeed in changing beliefs. Arguments more often produce the opposite reaction: digging deeper to defend cherished beliefs.

There are more pleasant ways of changing beliefs.

54 — Another essential 21st century skill: unlearning beliefs.

I never thought I can change my beliefs by playing a board game for children. Until I played Robert Kiyosaki’s Cashflow™ for Kids. Now, that’s an
CCLFI.Philippines

example of how I changed a belief, and along the way, a few of my beliefs about accounting.

My story started when a friend recommended Kiyosaki's "Rich Dad, Poor Dad" (Warner Books, 1997). What I particularly liked about the book is that the author kept stressing the importance of consciously challenging and changing our cherished beliefs and mental models about money, accounting and investing.

I was both entertained and educated. Some of his messages I already know and practice. Some others I know but do not yet practice. Yet others I never knew before. When my son asked me what to bring home from the U.S. as his Christmas gift to me, I asked for the first of the series of board games, Cashflow™ for Kids.

After five of us (three adults from our Center, a teenager and a Grade 5 pupil) played the board game two times, it was clear that children can quickly learn important financial principles and skills not taught in school. It became clear to us adults how a well-designed board game can teach children the consequences of their financial decisions.

We added our own learning-oriented ground rules. Running commentaries from anyone is allowed. In taking your turn, you may explain why you decided the way you did. Insights during play are discussed. And at the end of the game, we each summarized our individual learnings.

Here are the learnings by the Grade 5 pupil: *"You may have plenty of money, but if you do not put it to good use nothing will happen."* *"How small will be my income here; I won't buy this asset."*

The teenager said: *"Savings account (banks give you measly interest earnings) is not worthwhile, but if I have little money that's the best I can do."* *"High consumption (doodads) delays my investments."* *"Home-based business is excellent because it requires low capital and yields higher ROI than some securities."* *"Paying all credit card debt promptly is better than paying by installment."*

We adults gained the following learnings:

"Making money can be part of normal conversation among children (versus the belief that making money is dirty)." *"Too much liquidity means lost opportunities to invest."*

"You should work on a job (you working for money) only long enough to accumulate savings to start and manage your own business, and you run and enlarge your business so that you can generate much more savings to make portfolio investments (money working for you). When your passive income exceeds your expenses, you can retire early." *"You cannot retire early if you just keep working on a job."*

Kiyosaki challenges some conventional mental boxes in his book. A sampler:

- If something generates regular expenses instead of regular income (like the house you live in or the car you drive) then it is not an asset.
- Don't work for money (read: earned income from employment), let money work for you (read: passive income from portfolio investments).
- Most people do not work for themselves; they work for other people (employers), the government (taxes) and/or the banks (interest on loans/debts).

More than learning specific concepts or skills, learning/unlearning beliefs and mental models exerts more pervasive impacts on our work and life.

55 — Unlearning beliefs can be systematic and enjoyable.

D9e

THE REFLECTIVE EMPLOYEE

E: The Personal Learning Mode

When an employee habitually uses his daily life and work experiences as opportunities for learning or creating, then he practices the “personal learning mode”. Facilitating this personal process among employees greatly complements other knowledge management and organizational learning interventions.

The envelopes of PQM (productivity and quality management) and innovation are pushed farther usually via technology and management. To stretch these envelopes even farther requires psychology. According to Management Today, *“Peter Senge’s advocacy of the learning organization helped begin a revolution in the workplace... As more businesses go global, the need to overcome psychological barriers to necessary organizational change increases.”*

56 — Breach the PQM envelope with the personal learning mode.

In the personal learning mode one frequently asks: *What can I learn from this experience? What did I do right, and what did I do wrong? How else can I view this situation? What new insights did I gain? What do I do next in the light of these insights?*

The personal learning mode is essential in team learning.

Our Center coached a team of youth leaders/facilitators in their early twenties towards the personal learning mode. They belong to a voluntary youth organization that the Asian Social Institute is shepherding. This organization has several branches in Metro Manila and surrounding rural areas.

Our approach is experiential and quite unstructured. In the ending session we asked them what they had learned from our three-hour weekly sessions and from their subsequent daily practice. Here are some of their learnings:

- *“lumawak ang kamalayan”* (expansion of awareness)
- *“di basta-basta nagja-judge”* (suspension of judgment)
- “self-observation”
- *“paano magmasid”* (how to observe)
- *“nakita ang sarili mula sa prosesong”* (seeing self through process)
- *“natutong makinig”* (learned how to listen)
- [awareness of my] “motives”
- “focus on self”
- *“sariling paninindigan”* (awareness of my principles)
- “more keen on consciousness”
- “self concept”
- [learning is] “10% classroom, 90% sa labas [daily life]”
- *“mas nagiging observant”* (became more observant)

- “more understanding of another because of more understanding of myself”
- “self awareness”
- “*pagkawing sa sentro ng bawa’t isa*” (connecting with the “center” of each other)
- “*respeto sa space ng ibang tao*” (respect for the “space” of another person)

Before we started they had expected formal lectures, a program or schedule, and defined target leadership skills. After the sessions, they all agreed that this approach of learning from life experiences is different, deeper and complements what they had learned from more structured training programs in leadership and community organizing. They asked for an advanced second phase.

I was pleased to see their realization that this practice benefits them personally first and their organization second. Practice of the personal learning mode is a win-win situation for the member/employee and the organization/company.

Marilyn Daudelin and Prof. Douglas Hall of Boston University School of Management noted that participants in their reflection exercise (“Using Reflection to Leverage Learning” in: The Knowledge Management Yearbook 1999-2000) reported the following unintended benefits:

- Talking about insight with others helps foster a sense of community
- Participants gain experience with a set of simple tools they can use in the workplace
- The exercise helps synthesize learning in a way that makes it easy to share learning with co-workers

Daudelin and Hall defined reflection as “*the process of stepping back from an experience to ponder carefully and persistently its meaning by developing inferences.*” Interestingly, the first step in their approach is “wandering”, a free-flowing and unstructured personal exploration. Their reflection exercise was “*intended to add value to meetings and conferences*” because it can:

- Help surface insight and learning themes from events and experiences
- Help link learning with job performance
- Provide more thoughtful, personal feedback than is possible through traditional evaluation approaches.

Of course, traditional evaluation approaches are always useful. It is part of necessary single-loop learning processes in organizations and project teams. In my view, personal and unstructured learning loops can greatly complement traditional evaluation approaches. The former enables the person himself to address and handle relevant behavioral factors that are hardly touched by the latter. That is why Harvard Professor Chris Argyris calls the combination “double-loop learning”.

In double-loop learning, an employee does three things:

- Constantly practices the personal learning mode (installation and maintenance of feedback/learning loop within the individual);

- Shares his learnings with the rest of the team (connecting the personal learning loop to team/organizational learning loops);
- Takes personal responsibility over his own learning process and the implications for action of whatever he learns (autonomous learning-in-action at the individual level, which is the principle of subsidiarity applied to organizational learning).

Chris Argyris describes these three in “Good Communication that Blocks Learning” (in Harvard Business Review on Organizational Learning, 2001):

“Today, facing competitive pressures an earlier generation could hardly have imagined, managers need employees who think constantly and creatively about the needs of the organization. They need employees with as much intrinsic motivation and as deep a sense of organizational stewardship as any company executive. To bring this about, corporate communications must demand more of everyone involved. Leaders and subordinates alike – those who ask and those who answer – must all begin struggling with a new level of self-awareness, candor, and responsibility.”

Note the three key words: self-awareness, candor and responsibility.

57a — Convergence of personal and organizational learning is next

D9f

THE REFLECTIVE EMPLOYEE

F: The Corporate Warrior

If knowledge and people are the crucial assets in the knowledge economy, then pushing the envelope of corporate performance would sooner or later come up against personal limitations of employees and executives. What tools are acceptable and available for this kind of problem?

Remember the Peter Principle? *“In every hierarchy, each employee tends to rise to his level of incompetence; every position tends to be filled by an employee incompetent to execute it’s duties.”*

But I add a new twist: *“...unless they are in a learning organization.”*

There are facetious statements that hit you because there is some grain of truth in them. The Peter Principle hits me this way. I do not believe the Peter Principle is a principle at all, because I can think of an exception: learning organizations (LO). Introduced in 1990, LO disciplines pushed deeper what had hitherto been conventionally accepted as allowable intervention into the private personal lives, thoughts and feelings of employees.

The link between personal limitations and corporate performance is also the link between the (largely behavioral) disciplines of the learning organization and the (mainly technical) tools of knowledge management (KM).

The most popular tools of KM according to corporate surveys happen to be those tools with the most immediate and often measurable impact on corporate performance: intranet/extranet/Internet, groupware/collaborative tools, transfer of best practices, and customer database. These and other KM tools fall along three basic categories:

1. Internal and external sensing: customer database, intranet/extranet/Internet, customer feedback, competitive intelligence, LO/KM diagnostics/metrics, engaging external consultants;
2. Knowledge creation/sourcing: transfer of best practices, lessons learned meetings, product R&D, work improvisations, design of project templates;
3. Knowledge synergy: team learning, groupware/collaborative tools, communities of practice.

Three of the LO disciplines are personal aptitudes corresponding to, and needed for, the above three, respectively:

1. Personal mastery, including awareness of internal (self) and external realities, respect, a deep respect for and openness to reality and a sensitivity to trends and movements in relation to one’s personal goals and directions (facilitates organizational and environmental sensing);
2. Working with mental models, including the ability to recognize and free oneself from one’s limiting beliefs, assumptions and mental boxes, the

humility to re-examine one's inferences and the courage to make needed paradigm shifts (facilitates knowledge creation);

3. Systems thinking, including the ability to visualize interactions and interrelationships, see wholes beyond parts, and alternately analyze and synthesize (facilitates collaboration and knowledge synergy).

The links between LO disciplines and KM tools are related to the crucial transition from individual learning to group knowledge. Team learning happens to be both an LO discipline and a KM tool, for it is a testing ground for this transition. It is also interesting to note that the five LO disciplines if practiced unconnected to KM interventions can become quite remote from business results – the criticism leveled by David Garvin of the Harvard Business School against LO disciplines of Senge – with one exception: team learning.

The link between personal limitations and corporate performance is dramatically demonstrated by an interesting case: a training program for “ultimate warriors” for the U.S. Army Special Forces.

Designed by Dr. Joel and Michelle Levey, the program was designed to achieve peak levels of performance and teamwork under extreme conditions of danger and distress. According to Dr. Levey, the goal of the program is for the elite soldiers to be able to *“recognize, understand and influence/control their internal mental, emotional and physiological experience” and to strengthen their “mindful clarity they would need to choose a wiser path of action even under conditions of extreme stress.”*

Their means to overcome or stretch personal limitations were a combination of outward Western technology and inward Eastern behavioral tools

- Equipment for multiple-synchrony brainwave feedback, for learning how to move to a state of deep attunement among team members;
- Improvement of the quality of communications;
- Finding an inner state of calm intensity in which they can focus their mind for self healing or remain calm and alert for long periods of time;
- Aikido, for cultivating a greater sensitivity to inner energy flow and for transforming the energy of inner and outer conflict.

An unintended benefit was enhanced quality of communication and relationship with their families. Wives and children reported that their husband or father openly shared their feelings and fears, and seemed more in control of their emotions.

Post-program gains over some pre-program conditions were:

- Ability to manage stress 92%
- Clarity with regards to personal values 83%
- Access to extraordinary states of awareness 82%
- Access to extraordinary perceptual abilities 201%
- Ability to learn and integrate new ideas 109%
- Sense of bonding with team 30%

Ability to blend effectively with team 43%
Ability to extend sensory awareness 72%

A similar program (School of Sword and Staff in Santa Cruz, California) aims to produce “corporate warriors” inspired by the greatest Japanese swordsman Miyamoto Musashi. The program trains in clarity of mind, focused intent, control of emotions, reduced fear and anxiety, flexibility and strength.

57b — A portent of personal plus organizational learning to come

It is easy to understand if CEOs and employees feel like being in a war zone. In a few years competition from AFTA countries can threaten the survival of inefficient Filipino companies. Low production costs in China are worrying ASEAN businessmen. Downsizings and bankruptcies followed the 1997 East Asian financial crisis.

Perhaps it is time to think the unthinkable, the ultimate in personal mastery among executives and employees: corporate warriors.

D9g

THE REFLECTIVE EMPLOYEE

G: Emotional Savvy

Why reflect? What good does reflection do for the employee and the organization? What practical benefits can be expected?

This morning I received the final draft of a masteral thesis of one of my students. He is the assistant principal of a prestigious high school in Metro Manila. He developed an EQ test for high school students. One of his findings: leadership (being elected to a position in a student organization) is correlated more with EQ than with IQ.

This echoes research findings accumulating worldwide on the link between EQ and success in work and business. A study of 11 Israeli businesses found a high and significant correlation between EQ and business success. In another study, job performance of 100 bank employees was found to be predicted more by EQ than with IQ. EQ is correlated with performance of 13 financial sales staff in a Toronto bank. From a fourth study, EQ is also positively correlated with job performance of 622 staff members of a Canadian firm.

58 — EQ is more important than IQ for success in work and business

According to Salovey and Mayer, the five domains of emotional intelligence are:

1. Awareness of one's emotions (read: self-reflection) which enables
2. Ability to manage one's emotions, which enables
3. Ability to motivate oneself.

In turn, these three personal competence domains enable development of two social competence domains:

4. Ability to sense emotions in others, which enables
5. Ability to handle one's relationships.

Awareness of one's emotion is the doorway to becoming emotionally savvy – the practical benefit of self-reflection.

59 — Observing your emotion: the doorway to emotional intelligence

According to Dale Carnegie, only *“about 15 percent of one's financial success is due to technical knowledge.”* Yet schools keep focusing on technical knowledge and little on emotional skills. As a result, emotional skills easily become the limiting factor in personal and business success.

Following this reasoning, after all needed technical skills had been adequately provided, then training in emotional skills should give higher payoff in personal and organizational performance.

Let me show you one of the techniques I use for managing my emotions. At the Center, our mental model underlying this technique is:

self-observation → discover an emotional pattern → discover an underlying belief
→ challenge or change the belief → pattern fades.

In short, our model is: AWARENESS → CHOICE → CHANGE.

If you wish to learn this technique and reap its lifelong benefits, you have to practice the following steps every day.

1 – Self-observation. A good description of self-observation is provided by psychology Prof. Charles Tart of the University of California at Davis. Check out his interview in Dr. Jeffrey Mishlove's intuition.org website. The interviews were published in Dr. Mishlove's book "Thinking Allowed: Conversations in the Leading Edge of Knowledge and Discovery" (Council Oak Distribution, 1992).

I like Professor Tart's reminder what self-observation is not. It is not about judging yourself, which often brings in the "shoulds", "do's" and "don'ts" ingrained in us during childhood by parents and society. They form the inner judge who makes us feel guilty and rotten every time we do or think something which had been ingrained in us as "bad". Self-observation exposes the workings of these inner controlling patterns, and returns to us the power of choice.

I suggest a focus: watch for things, situations or people that bother you – particularly where the emotional reaction is recurrent and automatic.

We select this focus not because we judge those things, situations or people are "bad". Neither do we judge our feeling of being bothered is "bad". We select this focus simply because we decide that we will no longer allow this controlling pattern to foul up our work and relationships. We decide to get rid of this monkey wrench inside us.

2 – Discover patterns. While performing self-observation over several days (or months), you will accumulate much data about yourself. Regular patterns will emerge. In the Center we call these "personal issues". Select one issue that bothers you most. Decide that enough is enough. Decide to get to the root of it once and for all.

If you see self-blame or self-pity, then simply watch the inner judge at work. Better, look at this step as one of exploration and discovery. Have fun while learning.

Many times, just awareness of a pattern is enough to help you decide to get out of it whenever you see the pattern starting to operate.

3 – Uncover an underlying belief, assumption, expectation or self image.

What precisely gives the bother? The bothersome thing, situation or person are merely external triggers; the gunpowder and firing mechanism are all inside you. Were you bothered because you expected something else? Or because you believed or thought that you were this or that? Is there a hidden belief there somewhere?

The discovery of a pattern and its underlying belief is often enough to dissolve the pattern. Each time the pattern/belief attempts to operate, awareness gives you the conscious choice to permit or prevent the pattern to control you. Eventually it fades out. If the pattern/belief is a “core issue”, you may need more time and you may have to use another technique to weed out.

4 – Challenge the belief, and change it if you so decide. Most likely it was put there during your childhood by somebody else. Claim your power of choice. Retain, revise or throw away the belief. Once a root belief is altered, the emotional pattern it engenders is soon also altered.

60 — Awareness opens to you the opportunity to make a choice

Try and experiment. Learn by doing. The lifelong prize is inner freedom – with a practical bonus: greater success in your work and business.

D9h

THE REFLECTIVE EMPLOYEE

H: The Change Master

Being laid off when a company downsizes reveals much about an employee's personal weaknesses and strengths. Why wait for unexpected crises to tell you what are your weaknesses you must address, and strengths you should build upon?

Corporate downsizing, reorganization, leadership change, acquisition or merger, technological change, reengineering, bankruptcy, cessation of a product line – many such events have created the need for the “change management” (CM) specialist. In many Philippine firms and government agencies, rapid changes in information and communication technologies create demand for CM services: from mild changes (automation, streamlining of processes) to drastic changes (process reengineering, shift in business paradigm).

Sadly, CM mental models are largely from the management rather than the employee perspective. The employees bear the brunt of consequences of corporate change. They are then receivers of “interventions” such as communication, retraining-reorientation, redeployment/placement, counseling, or separation.

A balanced view is to take both perspectives. Instead of waiting for unexpected crises before reacting, what preparatory, proactive or preemptive actions can be done now – at the organizational and employee levels? At the corporate or agency level, shifting practices/procedures, policies and culture towards a learning organization is one such action. Accompanying this, at the employee level, shifting to the personal learning mode and using related tools and perspectives introduced in this Section D.

I introduced to middle-level managers of a multi-billion financial institution a concept: the Change Master. The concept is not original. Mitch McCrimmon beat us all to it (“The Change Master: Managing and Adapting to Organizational Change”, Pittman 1997). But based on several of our tested workshops, we have another way of organizing structured learning experiences to achieve the desired result.

First, let us examine the skill set of a Change Master according to McCrimmon. I noted that his 16-skills set fall into three categories (I invented or named the three categories):

- First category: Internal and external sensing: curious, self-critical, forward looking, visioning, networking, market focused
- Second category: Knowledge generativity/synergy: adventurous, communicating, imagining, improvising
- Third category: Action and self-responsibility: resilient, accountable, opportunistic (which also requires good internal and external sensing), selfless, initiating.

McCrimmon's mental model of a Change Master is thus one who is reflective within and alert without, creative and unafraid of the new and unknown, and intensely self-motivated.

On the other hand, our mental model of a Change Master consists of one who is

- Clear about his personal life purpose and how it relates to organizational purpose
- Emotionally savvy: Aware, can manage his emotions, alert to others' emotions, master of human relations, self-motivated
- Immersed in the personal learning mode: always learning and improving, innovative, can correct himself, always stretching and testing his viewpoints.

He is aware within and without, and sees the trees as well as the forest. He does not wait for things to happen to him; he makes new things happen. He knows where he is heading. In short, a Change Master is one who is a master of life instead of a victim of life.

61 — Be a Change Master: a
master of life, not a victim of life

D10

KM TOOLS 10: Intranets, or the Network Within

Knowledge networks are powerful tools; they can leverage and synergize knowledge held among their members. This is the basic reason why organizations set up IT-enabled internal networks, which is what “intranet” literally means.

The capabilities that an intranet gives members of an organization are similar to the capabilities that access to the Internet brings to an Internet surfer: (arranged roughly from the most to the least common)

- publication or dissemination of information;
- e-mail;
- news and bulletin boards;
- document storage and retrieval using search engines;
- discussion groups: general and specific interests;
- e-learning;
- exchange of best practices, work templates, lessons learned;
- virtual meetings/conferences;
- collaborative work;
- knowledge search and referrals, help desks, directory of expertise;
- decision support tools; and
- multitudes of other evolving uses

In addition, an intranet provides greater relevance to the needs specific to an organization, an open platform for a wide variety of specialized knowledge management software, security vis-à-vis the outside and seamless access to the Internet.

Intranets of local Philippine companies fall along two types. Intranets of local subsidiaries of foreign or multinational corporations are well-developed, being managed by experienced intranet managers in their parent companies. Intranets of local companies are still in the early stages of the intranet learning curve.

Almost a year after a big local manufacturing firm set up its intranet, it has not graduated beyond the first three uses in the list above: dissemination of information, e-mail and news. Their opening page is structured along functional divisions, with links to each division’s Web page.

It is still in Stage 1 of the four stages that Internet Web pages normally evolve through:

- Stage 1: publication of information
- Stage 2: above + interactive (one-to-many)
- Stage 3: above + transactions (one-to-many)
- Stage 4: above + community (many-to-many interactions/ transactions)

So far, employees' access to this firm's intranet is still low due to structural and behavioral factors. The return on investments expected from a real knowledge network has not yet been realized.

By having a Web-enabled ERP (Enterprise Resource Planning) system, another big local firm has a well-developed Stage 1 that allows its employees to access their personnel data: sick leaves, salary deductions, etc.

A third big local service firm whose operations are rather geographically dispersed entered Stage 2 when an engineer posted a query that triggered the growth of a successful and well-participated (several hundred participants, including the CEO) discussion list on various operational issues and concerns of the company. It was so popular that the HRD department took notice, saw its value and has planned to integrate it into its programs.

Business organizations establish internal (and also external) knowledge networks to create value. A good way to see how this happens is to examine an inspiring example of how the principle behind knowledge networks itself is the basis for the establishment of a business organization. One better appreciates how a tail works by examining an unusual case where the tail wags the dog.

62 — Knowledge networks can create and multiply value

Entovation International is an unusual case, but I surmise it is a pioneering example of many more emerging business models of its kind in this avowedly knowledge-based century.

Entovation is a virtual international network, a virtual community of practice of more than five thousand knowledge professionals in sixty countries, which collectively synergize, develop and deliver business solutions in the areas of innovation and technology transfer, knowledge management and learning, and enterprise strategy and transformation.

Set up by Debra Amidon in 1993 from a core competence in innovation assessment and innovation strategy, it has evolved into a global nested network of experts doing "virtual research and development" and evolving through expanding relationships, partnering and what she calls "strategic conversations."

Entovation has started an international initiative, the Global Knowledge Innovation Infrastructure (GKII), to bring together diverse capabilities in innovation from different industries, functional areas and countries into a collaborative network for cross learning, R&D and practical action.

Its basic business proposition is facilitating the leadership of knowledge-based companies through "knowledge innovation." Ms. Amidon – who is both CEO and CKO (Chief Knowledge Officer) – defines knowledge innovation as "the creation,

evolution, exchange and application of new ideas into marketable goods and services.”

The business value that Entovation creates for its customers comes from capturing externalities generated by knowledge networks. This is the same way value is created within an organization if its intranet is used to support a knowledge network.

The key elements are:

- establishing a network to link, source, combine, leverage and reuse knowledge from otherwise isolated individuals;
- creating value by user-driven or customized knowledge or combinations thereof; and
- building a critical mass of network members over a wide variety of specializations.

This is how the tail can wag the dog.

D11

KM TOOLS 11: Portals

After spending so much money and manpower setting up a corporate portal, an IT manager may discover after a year of operation that few employees, customers and other users rarely log in again. What went wrong?

Three years ago, I accessed a university website to check its academic calendar for an important date. Yes, there is an academic calendar – last year's! After that, several months elapsed before I accessed it again.

I use the Internet for four reasons: to get information, to communicate with other people, to buy things and to play games – in that order of frequency. Getting information happens to be my top priority, with communication as close second. In 1995, among my enjoyable first Internet experiences were live chats with my son in Los Angeles, followed by participating in chat places and discussion lists.

But other users' priorities are different. The 1.5 million Filipino Internet users are mostly young people in Metro Manila and I guess their priorities are communicating and playing games.

Users will access an intranet – which is the organizational counterpart of the Internet – if it serves their needs. Getting information may not be their priority. And if it is, is the information most useful to an employee easily accessible to her?

So, the first requirement for intranets and portals is usefulness/usability. They must respond closely to the technical and human needs of the users. Failure is detectable via simple symptoms.

Symptom #1: Usage is low (less than once a day per employee) or declining.

The intranet, properly organized and interfaced with the user, is a superb technology for delivering useful information and knowledge. That is its minimum functionality.

According to David Hastings of Computer Associates, the average knowledge worker wastes six weeks every year hunting for work-related information she needs. If a portal oriented to the specific roles or functions of major employee groups cuts down this wastage to only two weeks, then the portal would have saved the equivalent of one month of company payroll and released the corresponding time to more useful or value-adding work.

“High-octane” knowledge that can boost mission-critical employee performance include: individual customer profiles and order histories (for frontline employees), successful project templates developed from previous projects (for project managers and teams), best practices (for operations managers), manuals and

practical tips (for service personnel) and a customized “Who Knows What” directory (for HR managers).

The idea is to prioritize content according to what is most useful for producing results or creating business value.

Selecting “high-octane” knowledge cannot be done solely from the top; it must necessarily involve the community of users who frequently need such knowledge.

Symptom #2: The target users are not consulted during the design and operation of the portal. This sign reflects centralized conception and management.

After a survey and five consultations with major users my project team produced a prototype of a portal to a client. For phase two, we recommended modularizing the portal according to user groups and communities of practitioners and – this is important – give each user group responsibility and resources to develop their own module according to their needs.

The idea is decentralization to, and ownership by, users. The twin idea is encouraging user groups to migrate their informal knowledge-sharing habits towards the web. But the top has a role: participation of the CEO in a users group Q&A is a powerful message of executive sponsorship and support.

Portal technology has developed to allow users to select and organize content – freeing the IT unit for more useful work. For example, HR-oriented portals allow employees to update certain fields in their 201 or personnel file. News can be uploaded by most anyone. Portals are now customizable by each user. After Yahoo introduced myYahoo subscriptions jumped by 55% almost immediately.

Look at a typical Filipina employee’s desk. You often see personal items beneath the glass top: quotations, family pictures, *estampita* (prayer cards) etc. Her desk is both official and personal space. Empower her to customize the opening page that appears on her computer screen everyday, and you get a loyal user.

63 — Portal: a delightful personal and useful official work space

The idea is self-customization. The twin idea is personalization.

Symptom #3: The opening page of a corporate portal is structured along functional or departmental lines.

Such portals are sophisticated brochures serving only the purposes of the departments. How many times a year does an employee need information about the function, officers, telephone numbers and news from another business unit? A few times a year? Once a year? What a white elephant of a portal!

This symptom reveals that its designers carried over a “brochure” mental model of the portal.

When the photograph was invented, guess what they commonly use it for? Portraits. When the printing press was invented, guess how the types look like? Flowery scripts. When the movies were invented, guess how scenes appear? Like theatre performances! It is understandable to see the first corporate portals looking like sophisticated brochures!

The idea is to allow ICT to erase and extend the limits in our traditional thinking. But in the end, the idea is the user of the technology is king.

D12

KM TOOLS 12: Peer assist

Peer assist, like mentoring, apprenticeship and other ways of transferring tacit knowledge, is almost a forgotten art – forgotten because the formal school system has been too preoccupied with explicit knowledge. Or many educators have equated knowledge with codified knowledge found in books, journals, manuals and data bases.

By underlining the value created by knowledge transfer and by restoring recognition of the importance of tacit knowledge, knowledge management (KM) is resurrecting this ancient art.

64 — Peer assist: tacit-to-tacit knowledge transfer among equals

Peer assist is the horizontal face-to-face transfer of tacit knowledge across equals. Like many KM tools, peer assist is not new. What is new is the broader recognition of its significance, thanks to the KM framework. Here are examples, some of which may be familiar:

- Faster learners in any school grade level assisting slower learners, something they often resort to informally before examinations;
- Oil exploration specialists in British Petroleum requesting and receiving assistance via short visits from colleagues in similar company projects in other parts of the world;
- Filipino farmers with special skills host and demonstrate their skills to fellow farmers from other provinces, thanks to a peer assist program of a big Philippine non-government organization, PHILDHARRA or Philippine Partnership for the Development of Human Resources in Rural Areas;
- A newly-hired factory technician works closely for a few weeks with an experienced factory colleague;
- A boy shows his playmate how to throw a yo-yo horizontally;
- A Manila-based Fellow of the Philippine Pediatrics Society is invited by her Cagayan de Oro (northern Mindanao D ed.) colleagues to give a lecture on the latest knowledge about dengue fever and provide some consultative advice on a few dengue cases in the city;
- An intelligence executive in Quezon City (northern Metropolitan Manila D ed.) calls a colleague in another ASEAN capital to ask his estimates and insights about an urgent security issue.

As I write these, I am in Phnom Penh, Cambodia assisting the government, through the United Nations Development Programme (UNDP), in making preparations for its participation at the World Summit on Sustainable Development (WSSD) at Johannesburg, South Africa in September 2002.

As mandated by a UN General Assembly resolution, all countries are requested to submit National Assessment Reports reviewing their respective progress a decade

after the 1992 UN Conference on Environment and Development, also known as the Rio Summit.

The Philippines is widely recognized in the Asia-Pacific region as among those ahead in the pursuit of many sustainable development initiatives. Having been closely involved with the Philippine experience, I was requested to give advice in the planning and execution of their National Assessment process. This is another example of peer assist.

With me and also providing similar assistance to RGC are two friends from UNDP-Bangkok SURF (Subregional Resource Facility), Ms. Anita Nirody and Mr. Rene Anderson.

SURF is a UNDP regional project that operates a knowledge base to facilitate information and knowledge sharing among UNDP projects and among Asia Pacific countries specifically in preparation for WSSD. Their Web site is obviously designed with the KM framework in mind.

And, SURF does not limit itself to transfer of explicit knowledge, as shown by the presence of Anita and Rene in Phnom Penh.

From my experience, here are some practical tips for those involved in peer assist:

1. **Mutual respect:** The process involves combining knowledge of the assister about what works or what works well, with the knowledge of the assistee about specific local conditions and needs.

The process is a joint exploration of issues, generation of options, sharing of insights and reaching consensus. The process works best as a horizontal (no pulling of rank) collaborative process that is based on mutual respect and associated “people skills”.

2. **Attention to tacit elements:** Initial meetings between assister and assistee tend towards clarifying facts and nuances, and understanding each other’s perceptions and language.

From those face-to-face interactions, the assister gets a first-hand sense of the assistee’s needs, views and capabilities. Useful insights are shared not only during formal meetings but also during informal occasions.

I got valuable indicative insights about the political and bureaucratic culture in Cambodia over lunch with a European expatriate, and about “who’s who”, “who is close to whom” and “who does what best” in the government over another lunch with my Cambodian counterpart.

These personal insights are often not available from documents and official

65 — There are important knowledge not found in documents

communications.

3. **Results oriented:** The aim of peer assist is for the assistee to be enabled to perform an action better or to achieve a desired result. It is to bring collective knowledge to bear efficiently and effectively toward this end.

Assister and assistee contribute to perform the task. Therefore, much prior written and initial face-to-face communications are devoted to clarification of roles, expectations and deliverables.

The peer assist process takes place during performance of an action, and learning takes place while assister and assistee perform the details of a task together.

In KM, the ultimate “test of the pudding” is results.

In the emerging planetary knowledge society, learning is leaving behind the traditional classroom lecture model. And so a new section on “Schools of the Future” is included in this book.

See you then, or in Khmer, *Chhum reap lear!*

D13

KM TOOLS 13: Lessons-Learned Meeting

(This chapter is excerpted from an article co-authored with William Gois, and included in this book with his permission)

The workplace is a great school, and lessons-learned meeting is a tool to facilitate capturing knowledge from, and re-using that knowledge in, the workplace.

Ask yourself this question:

Estimate what percent of what you know now came from what you learned from school.

Most of those we asked this question gave a figure much less than 50%.

What does that mean? It means we learn much – often much more – from doing than from listening to a lecture and reading a book or manual. More knowledge is gained from working than from formal schooling. The workplace is a greater school.

66 — More learning occurs from doing than from schooling

From the results of a Stanford University research, the converse is also true: in the workplace, we tend to apply more the knowledge we gained from there than from school.

According to University of Southern California Marshall School of Business Professor Morgan W. McCall, Jr. 73 percent of surveyed MBA program graduates in the U.S. said that their MBA skills were used “only marginally or not at all” in their first managerial assignments.

Stanford University Professors Jeffrey Pfeffer and Robert I. Sutton noted that despite 1,700 business books published yearly (1996 data), \$60 billion spent on training, an estimated \$43 billion spent on management consultants, and 80,000 MBAs doing business studies, the changes in actual management practice is, correspondingly, disappointingly little (The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action, Harvard Business School Press, 2000).

After four years of studying this “knowing-doing gap”, they concluded:

“...one of the most important insights from our research is that knowledge that is actually implemented is much more likely to be acquired from learning by doing than from learning by reading, listening, or even thinking.”

These findings destroy our cherished assumptions about the value of academic degrees.

The lesson is: for more effectiveness, knowledge application and knowledge acquisition processes must occur within contexts as close together as possible. We must consciously alter our preferences away from academic learning. Our preferences must be biased towards the lower right corner in the table below.

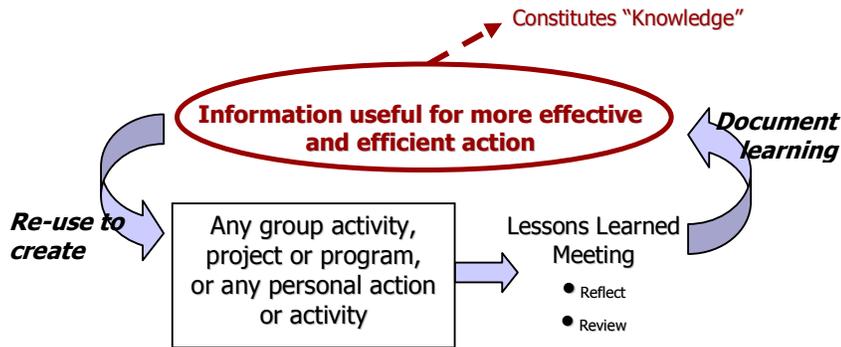
Immediacy	Outside the Work Setting	Within the Work Setting
Remote from use	Academic degree programs, Professional journals	Corporate universities, In-house training programs
Proximate (before or after use)	Case studies, Industry benchmarks and best practices	Work templates & manuals, After-action reviews, Lessons-learned meetings (or post-mortems)
Immediate (during use)	Management games, Computerized simulations, Role playing	Process documentation, Learning-in-action, On-the-job training

Consequently, the practical questions the knowledge manager must address is this: How do we facilitate learning from doing? Conversely, how do we facilitate reuse of such learning in further doing?

67 — Learn best from doing; do best from learning

In an organization, group or community, learning is a social process. So, the operative question really is: How can these doing-learning-doing processes be facilitated in a group or team context? In short, what are the tools of Team Learning?

The partial answer to the last question is Lessons Learned Meeting or LLM. The chart below explains the significance of LLMs.



An LLM should be conducted at the end of any activity, no matter how short or long, among those who performed the activity, to document their answers and insights on the following questions:

- What worked, or what worked well? Why?
- What did not work? Why?
- What were the facilitating and hindering factors?
- How differently should we do it the next time around to improve effectiveness and efficiency?

The answers will be useful to those who will repeat the same or similar activity under the same or similar context. Therefore the answers must be documented and made available in a convenient and easily accessible way.

The answers to the “why” questions above can be significant. A “why” question can uncover unconscious assumptions (read: limiting mental boxes). Awareness of one’s assumption creates the opportunity to examine, and if needed to revise, those assumptions (read: freeing oneself from a limiting mental box). Out-of-the-box thinking is a golden door of opportunity to innovate something that works even better than a current “best practice”.

“What worked well” or “what works best” refer to current good or best practice. Out-of-the-box thinking can produce a future “next practice”. Documenting a good or best practice for replication is good but it is simply copying from the past; innovating “next practice” is better as it is creating something completely new for the future. It means extending the envelope of productivity and effectiveness farther than everyone else.

7 — Something better than best practice: “next practice”

A second or third “why” question addressed to the answer to the first “why” question can lead to root-causes of problems. It can lead to re-framing an issue or problem statement from a larger or systemic perspective, or based on a more relevant context. It can lead to asking personal questions such as, “Why do I keep doing what I do?” “What are my unconscious behavioral patterns and where did they come from?” It can lead to more conscious scrutiny of what Peter Senge calls

our “ladder of inference” – the often unconscious way we reason out and make conclusions or decisions based on what we believe are the facts.

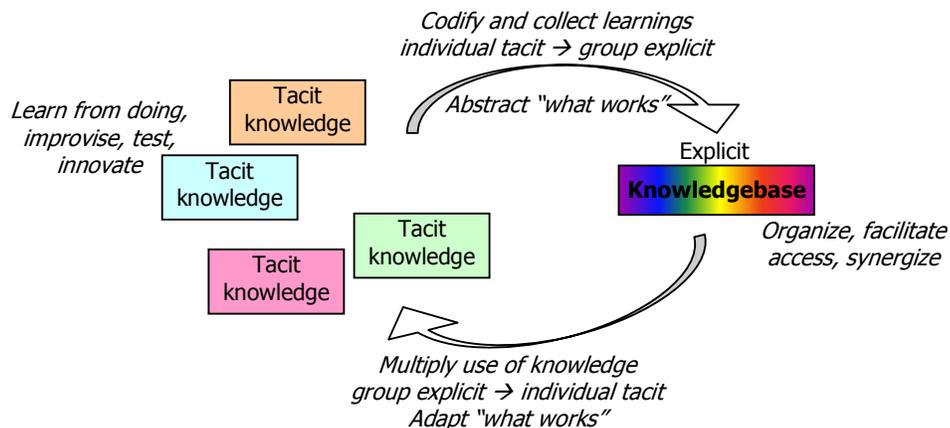
D14

KM TOOLS 14: Updating Knowledgebases

A knowledgebase or knowledge repository is a database that contains knowledge objects, which are computer-storable units of information useful for effective action. Examples of knowledge objects are:

- Manuals, how-to instructions, maintenance/repair kits, special-purpose kits
- Work templates
- Best or good practices
- Course designs, lesson plans, learning materials, instructors' and facilitators' manual
- Test and assessment tools
- Directory of experts, directory or search engine of a knowledgebase, knowledge taxonomy
- Policy- or decision-making models or aids, expert systems, simulation models
- Blueprints, process flow maps, process designs
- Chemical, pharmaceutical or industrial formulas, recipes
- Documentation of what works (or what does not work) from Lessons Learned Meetings

A knowledgebase can be part of a living and dynamic system for knowledge capture, creation, exchange and re-use, a system for capturing the huge fund of tacit knowledge within individuals into explicit knowledge objects that can be shared across the entire organization.

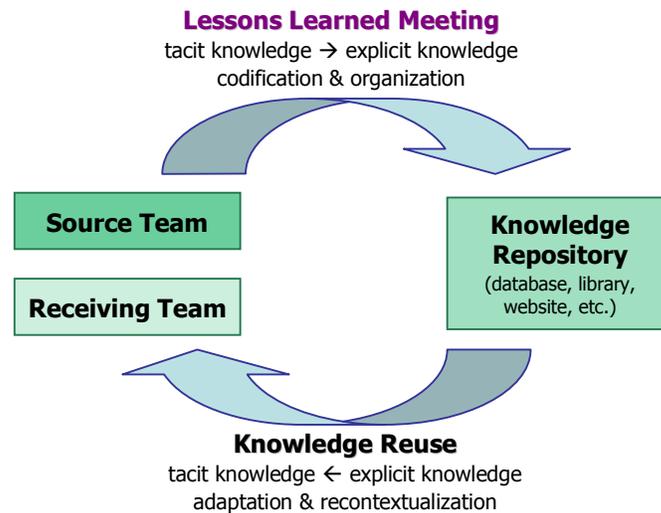


On Organizational Learning Brain

An example is in proper order.

Documentation from a Lessons Learned Meeting (LLM) is explicit knowledge. It makes available to others useful lessons and valuable insights by those who performed an activity that otherwise would remain tacit, unconscious or forgotten.

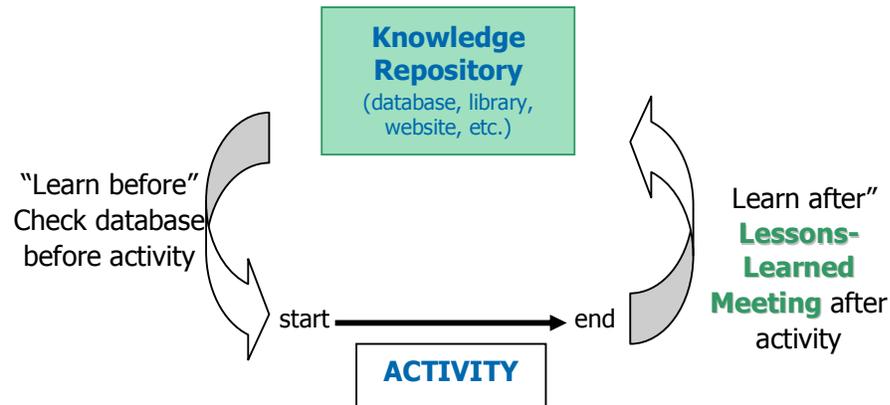
Team learning is the people side of the processes in an Organizational Learning Brain. LLM is a process of “mining” individual tacit knowledge and converting it



to explicit group knowledge, which can then be conveniently multiplied and shared for wider use and benefit. The explicit group knowledge can be stored, organized, retrieved and managed as a knowledge repository or knowledgebase – the information technology side of an Organizational Learning Brain. Group explicit knowledge, when accessed, applied and adapted or re-contextualized by a member in another work area is thereby reconverted into that member’s new or incremental individual tacit knowledge. The system consisting of this constant conversions and enrichments between individual tacit knowledge and group explicit knowledge, between learning from doing and doing from learning, and between face-to-face LLM and ICT-mediated knowledge repository, can be called the Organizational Learning Brain. The repository of knowledge codified from LLMs (and other knowledge capture/creation processes) is a growing, living repository – like the brain of a living organism that a dynamic and responsive organization is very similar too.

68 — Organizational learning: from tacit to explicit repository to tacit

As a matter of habit in a learning organization, the repository is consulted before starting an activity – to check what were the lessons learned from previous groups who performed the same or similar activity. As the figure below shows, there is learning before an activity (retrieved from the knowledgebase) and there is learning after the activity (contributed to the knowledgebase).



The LLM is one of the tools for facilitating team learning processes. There are other knowledge capture and knowledge culture/creation tools. Dialogue is another tool. Constructing a composite systems or cause-and-effect diagram is another. Mind mapping as a group process often is a learning experience too.

Facilitating team learning is both an art and a technology⁶. It relies on skillful use of both information technology and people skills, of facility with the external world of action and with the internal world of reflection. It is a technology because procedures such as knowledgebases, search engines and LLM exist to facilitate team learning. It is an art because organizational learning is more like tending a garden than fixing a machine.

GARDENER METAPHOR	MECHANIC METAPHOR
An organization is more like a living organism.	An organization is more like a machine.
“Organizational greening”	Fixing a machine
Maria Montessori’s method	Henry Ford’s assembly line and replaceable parts
People skills	ICT technologies

⁶ Besides Lessons Learned Meeting, other tools and service packages CCLFI.Philippines has developed and delivered to various clients along **organizational greening** include: Filipinized Organizational Climate Survey, Learning Organization Diagnostics®, Green Spot® Strategic Planning Workshop, Tapping into Your Creative Wellsprings, Problem-Finding Workshop, Logframe Workshop, Team Learning workshop series, Training of Team Learning Facilitators and Personal Learning Mode workshop series.

E1

KM STRATEGIES 1: ICT Focus or People Focus?

Some knowledge management (KM) practitioners focus on information and communication technologies (ICT): groupware via intranets, computer-assisted collaborative work, codifying and storing knowledge in databases, intelligent search engines, etc. Others focus on people: peer assist programs, lessons learned meetings, team learning and transferring best practices.

Which strategy works best?

Some KM practitioners come from backgrounds in engineering, computer or information science, statistics or mathematics. They tend to favor what Karl Eric Sveiby calls the “IT track” of KM.

Those with backgrounds in psychology, education, management, HRD (human resource development) and OD (organizational development) tend to favor the “people track”.

The two groups of practitioners view knowledge quite differently.

The ICT-focused group views knowledge as “objects” to be documented, classified, stored, retrieved, analyzed and otherwise manipulated for useful applications. This group is new and growing very fast, thanks to new developments in information sciences, such as artificial intelligence, fuzzy logic and simulation modeling.

The people-focused group views knowledge as primarily tacit, largely embodied in the skill of experts, embedded in processes intimately linked with people, and often difficult to codify.

I always harbor suspicions of approaches that are technology-driven — strategies that are selected on the basis of the technical background of the decision maker, or solutions that are skewed towards the vendor’s particular product lines.

Yesterday, in my graduate class in KM at UP Technology Management Center, we saw how much R&D project identification in the Philippine academic and scientific research communities has been too “researcher-driven.”

I agree with the observation of Mr. Flaviano Pagador, a former official of the Department of Science and Technology who said: *“The personal interest of the researcher/inventor is often the dominant factor which determine what technology to develop with little regard to the market requirement. As a result, the technologies/inventions developed are oftentimes irrelevant to the needs of the market and end-users.”*

So, what are the needs of the end-users?

Professors Morten Hansen and Nitin Nohria of the Harvard Business School, as well as Thomas Tierney, the managing director of Bain, observed that KM needs of knowledge-based service firms (e.g. consulting firms, health care providers, IT services, etc.) fall somewhere between two opposite types:

Type 1: Companies that offer repetitive, similar or modularized services and whose competitive strength lies in delivering such services quickly, cheaply and reliably.

Type 2: Companies that offer one-of-a-kind or custom services and whose competitive strength lies in their high level of expertise, tailor-fitted quality and personalized customer relationship.

The two types need very different KM strategies.

The Type 1 company creates value by large-scale reuse of knowledge applied to similar recurring types of service.

Therefore, it needs to codify and store such knowledge for easy and efficient retrieval, and so has to invest in sophisticated knowledge databases accessible via the company intranet, especially if the company has numerous branches all over the world.

Once a project had developed an effective new approach, work processes and templates, these are captured in documents and stored electronically for use in later similar projects.

Efficient people-to-document (e.g. process documentation, taxonomy) and document-to-people (e.g. tracking, intelligent search engines) processes become crucial for delivering their kind of service.

Therefore, an ICT-focused KM strategy is most appropriate for the Type 1 company.

The Type 2 company creates value by high-level expert service tailored to particular clients' needs. Every engagement is unique and every solution requires practically fresh R&D.

The successful Type 2 company has high level experts in their niche and, if needed, can outsource other expertise from its strategic partners or network of cooperating firms.

Delivering its services requires the ability to accurately gauge the particularities of client needs, and to design a responsive solution accordingly. Such services require knowledge with high tacit content, people-to-people transfer of knowledge, effective teamwork among a cross-functional team, innovativeness or improvisation, and excellent people skills.

Company investment in ICT hardware and software is only moderate but hiring of senior professional staff tend to be a crucial and elaborate affair.

Therefore, a people-focused KM strategy is most appropriate for the Type 2 company.

Professor Hansen calls the approach of the first type, “codification strategy” and that of the second type, “personalization strategy”. A company can practice both: the codification strategy in those projects where frequent reuse of knowledge is encountered, and the personalization strategy in other projects where highly tacit and person-centered skills and expertise are important.

The need dictates what KM strategy is more appropriate.

69 — Business imperatives dictate
KM strategy

E2

KM STRATEGIES 2: Build and cultivate your 3 P's

Embodied knowledge in employees and embedded knowledge in work processes that they do are the firm's crucial resources in a global economy turning more and more knowledge-based.

Hence, a straightforward strategy in knowledge management (KM) is building and cultivating that intellectual capital.

Unfortunately, intellectual capital is inadequately captured using traditional accounting procedures. Market values of companies, especially knowledge-based companies, are often many times their book values.

The gap is the value of intangibles that buyers and sellers in the stock market see which our accounting systems cannot see. To build and cultivate crucial but intangible knowledge assets, we must first be able to recognize, observe and preferably measure them.

There is a consensus among practitioners that intellectual capital has three distinct components.

According to Thomas Stewart, member of the *Fortune Magazine* Board of Editors and author of "Intellectual Capital, the New Wealth of Organizations," the three are:

1. Human capital (what employees bring with them when they leave the office: skills, work attitudes);
2. Structural capital (what are left behind in the office: work processes, patents, databases, manuals); and
3. Customer capital (what accountants have tracked as "goodwill" in a firm's external relationships).

70a — Knowledge: embodied in people, embedded in processes, earned from patrons/partnerships

Karl-Eric Sveiby, one of the early pioneers in KM, developed an Intangible Assets Monitor which is composed of indicators in three areas: employees' competencies, internal structure and external structure (i.e. relationships with customers and other external stakeholders).

Leif Edvinsson of Skandia, a Swedish financial/insurance firm and one of the first corporations to recognize the importance of tracking intellectual capital, saw three components: human capital, organizational capital and customer capital. He further broke down organizational capital (which corresponds to Stewart's structural capital and Sveiby's internal structure) into innovation capital and process capital.

Kaplan and Norton, in order to balance or supplement the common but admittedly limited scope of financial reports in assessing overall corporate performance, developed the “Balanced Scorecard” which adds three new areas to the more common financial area: learning, process and customer areas.

Although KM is not the framework of BSC, its three new areas is surprisingly parallel to the three components of intellectual capital recognized by European practitioners. A minor note: the third area has now been generally recognized as the valuable network of all external stakeholders that a firm has built and cultivated: customers, suppliers, strategic partners and collaborators, academic and industry consultants, etc.

KM initiatives have become popular. An international survey of 2,320 firms conducted by Management Review revealed that only 34% have KM programs in place but another 22% is planning to implement one in the near future. Of 1,625 U.S. firms surveyed, 79% believe KM is vital to their companies’ future success, although 63% did not have a KM program in operation. By the way, a 1998 KPMG study on KM showed that only two per cent consider KM a passing fad.

Surveying around three dozen of corporations, Sveiby in 1996 found that their KM initiatives largely fall along three categories of building or cultivating intellectual capital:

Enhancing employees’ competence, such as creating careers based on KM, creating microenvironments for tacit knowledge transfer and learning from simulations and pilot installations. These initiatives build and cultivate the first component of intellectual capital, namely: **human capital**.

Among the corporations doing these types of KM initiatives are Buckman Laboratories, IBM, Pfizer, WM-Data, Affaersvaerlden, Hewlett-Packard, Honda, PLS-Consult, Xerox, National Technological University and Matsushita.

Building **internal structures and processes**, such as creating new revenues from existing knowledge, capturing individuals’ tacit knowledge and storing, spreading and re-using such knowledge, measuring knowledge-creating processes and intangible assets, and building a knowledge-sharing culture.

More corporations are implementing KM measures addressing the second component of intellectual capital. Another survey, the Emerging Practices in KM Consortium Benchmarking Study by the American Productivity and Quality Center in 1996, revealed that the most popular KM initiative is transfer of best practices. Process improvement and new product development are also frequently mentioned.

In Sveiby’s survey, the following corporations were observed building internal structures and processes: 3M, Analog Devices, Boeing, Buckman Laboratories, Chaparral Steel, Ford Motor Co., Hewlett-Packard, Oticon, WM-Data, McKinsey,

Bain & Co., Chevron, British Petroleum, PLS-Consult, Skandia AFS, Telia and Celemi.

Cultivating **relationships with external stakeholders**, such as offering customers additional knowledge and gaining more knowledge from customers, addresses the third component.

Corporations with initiatives in the third area were: Benetton, GE, National Bicycle, Netscape, Ritz Carlton, Agro Corp, Frito-Lay, Dow Chemical, Outokumpu, Skandia Switzerland and Steelcase.

In short, knowledge embodied in your **people**, embedded in the **processes** that they do and earned from your **partners/partnerships** outside are your valuable and decisive assets in the knowledge era.

70b — Build your 3 P's!

The specific choices depend on the business strategy and strategic value propositions of your firm, but the general strategy is rather simple and straightforward: build and cultivate your 3 Ps.

“Whereas at one time the decisive factor of production was the land, and later capital, today the decisive factor is increasingly man himself, that is, his knowledge.”
– Pope John Paul II

E3

KM STRATEGIES 3: Working is Learning; Learning is Working

Building a learning organization — where activities at all levels and functional units of the organization are deliberately transformed into learning or knowledge-creation processes — is another strategy for knowledge-based corporations.

Organizations follow a mix of learning modes, some planned and some rather unplanned. There are three modes: traditional learning, action learning and learning-in-action.

Traditional Learning

The traditional learning mode is where the learning setting is separate in time and place from the work or application setting. Usually, learning occurs in a classroom setting using the lecture format. Application occurs later and in another setting, and the transfer of learning depends on how relevant the classroom materials are to work requirements. If learning took place when an employee took her college degree, then application of learning occurs years later. If learning took place in an in-house HRD (human resource development) workshop, then application occurs days later.

Classroom learning is effective if the skills involved have substantive cognitive and explicit knowledge components, but it becomes more irrelevant and remote if tacit knowledge has to be transferred.

There are executives whose mental model of learning is still the cognitive classroom lecture mode. In a workshop for some government executives, a participant remarked that an experiential module is redundant because he had heard the topic in a previous lecture. Learning to this executive is synonymous with “conceptual understanding” instead of “learning for effective action” — the mental model in knowledge management.

Action Learning

The second mode — action learning — is when learning occurs in a real work setting and during real time. Real tasks are used as the vehicle for learning. The learning is immediately relevant and useful to the work setting. Both tacit and explicit knowledge transfers can take place more effectively. OJT (on-the-job training) and practicums are examples. They are attempts by schools and universities to gear their curricula towards greater relevance to the work setting.

However, action learning is only a special effort by the corporate HRD or Training Department, where courses and workshops are still largely traditional. Action learning is a learning mode applied in particular activities or projects, using one of a wide variety of review procedures.

Deliberately reviewing and evaluating any activity after it is done is an act of learning. Learning is basically a feedback loop. We are familiar with feedback procedures like project or program evaluation or review, after-action review, post-mortem, retrospective, lessons-learned meeting, Deming learning cycle, and critiques. Sometimes, the act of learning is undertaken while an activity is on going, and so we have procedures like mid-term review, process documentation, action learning, learning history and team learning.

The term “action learning” itself belies the limiting assumption underlying this process, namely, the premise that action and learning are separate things and that action learning is where you “attempt” to bring action and learning together. Thus, action learning is a special or isolated effort within an organization where the prevailing mental model is that action and learning are basically separate things. Action learning is an isolated island of initiative in an ocean that is largely steeped in traditional modes of learning.

Learning in Action

The third mode is called “learning in action” or “learning organization”. In this mode, action and learning are intertwined at all levels of the organization. Learning is embedded throughout the organization: in its people, processes and culture.

In a learning organization, innovation does not happen only at the R&D or Product Development Department. Mistakes can happen anywhere in the organization and therefore learning opportunities are inherent everywhere throughout the organization.

A clerk who improvises or improves a work process does innovation or knowledge creation. A work team that discovers (via their regular lessons-learned meetings) what does not work and what works better, also performs innovation. A visiting serviceman who is trained to observe and therefore notices a novel way a customer uses their product to avoid a frequent malfunction and who immediately passes the idea to the R&D Department is performing an act of learning. The CEO, who recognizes how one of his own limiting mindsets (an example of double loop learning) had been preventing him from appreciating the significance of a strategic option, is performing an act of learning.

Every task is converted into a learning situation, thus changing the basic nature of the task, the people performing it, and the culture of the organization itself. Reflection, review and learning occur at the organizational, team and individual levels. Every employee strives to become a reflective, learning individual (double-loop learning). And every nugget of learning gained throughout the organization is an increment in the steadily growing knowledge asset of the corporation.

71 — Discard the idea that learning and working are separate activities

The strategy of transforming their organization into a learning organization is a challenging long-term knowledge management strategy that has become vital for survival and excellence for more and more knowledge-based corporations.

E4

KM STRATEGIES 4: Deploy Knowledge for Maximum Value Creation I

Knowledge is what creates value for an organization when applied or used. Knowledge management (KM) is application of knowledge to produce the greatest and most relevant business results, namely, the strategic value proposition of a company.

A company's value proposition identifies the action or actions that will result in greatest value for customers and thus also for the company. It is based on the company's competitive strengths, and on the threats and opportunities it faces in the market. In 1993, Michael Treacy and Fred Wiersema reported in the *Harvard Business Review* their study of over forty companies. They discovered that each delivered superior value for customers in one of three areas: operational excellence, product leadership or customer intimacy⁷.

The value proposition of a company, in the words of President Carla O'Dell and ex-Chairman C. Jackson Grayson Jr. of the American Productivity and Quality Center (APQC), shows the area where a company experiences "the highest pain or the highest gain." It is the area to focus KM initiatives.

72 — Deploy knowledge for maximum value creation

In 1994 APQC did a benchmarking study of over a hundred international companies. O'Dell and Grayson described how their KM strategies and interventions fall along the three areas found by Treacy and Wiersema.

Operational Excellence

Companies in very competitive, mature and stable industries, find themselves locked in a struggle for market share and have to constantly stretch the envelopes of productivity, costs and operational efficiency.

Action learning and transfer of best practices are two KM tools that give immediate payoffs to companies where teams perform processes repeatedly, or where different teams across many plants, offices or retail outlets simultaneously perform similar processes.

An oft-cited case is Texas Instruments' transfer of best practices across its thirteen wafer fabrication plants scattered across the globe. There was wide variation

⁷ There is a fourth type I call "External Dependence." Companies that depend significantly on another company or on the government for its survival and profitability belong to this type. Examples are: franchise holders, companies whose main product is supplied by or tied to a single supplier or partner, companies which depend on favorable government incentives or regulation, and companies enjoying a monopoly position by virtue of a government legislative sanction, regulatory award or utility franchise.

across wafer fabs in cycle time, yield and other performance measures. As former TI chairman Jerry Junkins described it, “*We have world-class operations side-by-side with others who just don’t get it.*” Identifying what works best in various process steps and transferring this knowledge to other fabs resulted in saving \$1.5 billion over three years - equivalent to the capacity of an additional fab.

If operation is global in scale, documentation and reuse of knowledge from best practices are greatly enabled by databases. This ICT-focused approach becomes ineffective when knowledge to be transferred is mostly tacit, or when people-focused approaches such as mentoring or peer assistance are more effective. Toward its vision of becoming “The Knowledge Bank” in development-related knowledge, the World Bank uses a three-tiered KM architecture: (a) ICT-focused Sector Networks with databases for codified knowledge, (b) people-focused “Help Desks” for specialized issues that are best handled personally by experts or involve hard-to-codify tacit knowledge, and (c) “knowledgebases” for storing and accessing knowledge that lies in between.

Product-to-Market Excellence

Companies in fast-moving, unpredictable and multi-niche industries create customer value by customer feedback to product design, speed of R&D-to-market, innovation and niche leadership. Competition is not for greater market share but for new niches. Many IT and knowledge-based companies operate in this type of business environment and find themselves having to adopt a value proposition based on product excellence.

Illustrative cases from the APQC benchmark study include:

- Hughes Space & Communications: reuse of old designs for faster and cheaper release of new products
- National Security Administration: IDEA (Innovative Development and Enterprise Advancement) which funds R&D via a simple, fast and streamlined process
- IBM: ICM (Intellectual Capital Management) intranet and use of Lotus Notes as a vehicle for exchange of ideas and documents, collaborative work, and knowledge tracking among various competency groups
- Hoffmann-La Roche: “Right the First Time” program for speeding up the long and costly drug approval process with regulatory agencies.

Customer Intimacy

KM tools for addressing this value proposition involves (a) collecting and organizing information about each customer for delivering highly customized services, (b) bringing the collective knowledge of the organization at the fingertips of sales or front staff for effectively addressing specific customer needs, (c) providing knowledge or knowledge-enhanced products to customers, or (d) providing staff the means for efficient learning about all phases of customer relations.

A remarkable comprehensive customer feedback system that does all the above is ECHO (“Every Contact Has Opportunity”) at USAA, a Texas-based consortium of insurance companies and member-agents. ECHO is an on-line system that enables USAA customer service reps to:

- Capture, track and discern trends in customer comments and inquiries;
- Record customer comments on new products and processes (the “Hot Topics Program” which generates an average of 1,500 customer comments per week);
- Forward suggestions to management on how to improve productivity (the “Employee Feedback” program which generates about 75 “can-do-better” ideas per week);
- Obtain helpful guidance for diagnosing and solving customer problems, based on prior successful cases and best practices;
- Tailor services to specific customer requirements.

What is remarkable with the system is not its technical comprehensiveness but how it supports, or builds, a culture of organizational learning in USAA - learning the most from every customer contact and learning from all facets of work in the organization.

Says USAA Executive Director of Member Relations and Feedback Tim Timmerman,

“There’s a sense of motivation and of team. The excitement and the opportunity this culture provides is that it constantly questions itself, trying to improve the way it works. The sense of dynamism that exists here is truly remarkable.”

69 — How your company creates value should drive how you do KM

E5

KM STRATEGIES 5: Deploy Knowledge for Maximum Value Creation II

There are four types of companies depending on how they compete to survive and excel (see previous chapter). Which type is your company? Is creating knowledge critical for your type?

I have devised a simple questionnaire for this.

For each of the following seven business objectives, ask yourself: *“How much does my company’s survival and competitiveness depend on achieving this objective?”* For each business objective, give an answer along a scale of 1 to 10:

1. Keeping costs down
2. Improving quality
3. Speed of delivering products/services
4. Satisfying customers or keeping customer loyalty
5. Satisfying a partner/ally, key supplier or licensor/franchisor
6. Regulatory/policy support from a government agency
7. Constantly bringing new products/services into the market

Where did you give highest scores?

1. If you scored Objectives 1-3 highest, your company’s survival depends on **Operational Efficiency and Excellence**. Your company needs to apply creativity in quality management to fight for maintaining or increasing your market share. Your employees need to be motivated or given incentives to improve, improvise and innovate through Quality Circles, sharing of best practices, individual performance-linked incentives, Employee Innovation Programs, and productivity awards.

2. If you scored Objectives 3-5 highest, your company’s survival depends on **Customer Intimacy and Loyalty**. Your company needs to apply creativity in customer relations management. You need employees with good EQ and “people skills”. You need product development people who can create new ways of satisfying and keeping customers.

Companies who belong to the first two types profits most from organizational learning, where employees are trained or motivated to constantly perform “learning in action” or the plan-do-review-learn (Deming) cycle.

3. If you scored Objectives 5-6 highest, you are a different kind of company because your survival depends much on external factors: on pleasing a government agency and its top decision-makers, on having government pass or maintain rules/regulations/policies that favor your company or your industry sector, or on convincing a strategic partner or licensor to keep your special relationship, franchise agreement, exclusive distributorship, etc. Of course, their favorable decisions depend on your maintaining product or service quality but ultimately

your company's fate is decided by a few decision makers outside. You are **Externally Dependent**.

If you scored highest in Objective 6, your survival is favor-driven rather than market-driven and the resulting precarious situation calls for certain "people skills" among your top executives in currying such favor from government officials.

73 — Favor/rent driven business:
dark side of stakeholder capital

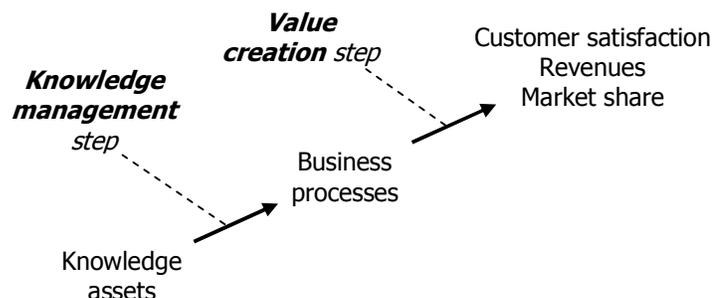
When I was working for the government under the National Security Council, and earlier, when I was consulting for the now defunct Economic Intelligence and Investigation Bureau, I tended to have trepidation and feel discomfort when I see those corporate executives who resort to patently unethical means to persuade government officials to make decisions or enact/maintain regulations favorable to their company or industry sector.

4. If you scored Objective 7 highest, your company needs knowledge creation the most. My guess is that in the Philippines, fewer companies are as yet of this fourth type of **Product Leadership and Innovation** compared to the first two types. If your company belongs to this type, most likely you already have an R&D or a product design/development unit. Or, your entire company is into creative design and innovation, such as architectural firms, advertising firms, companies into fashion apparel, computer animation, website design/development, etc.

You depend much on people who are innovative, technically competent researchers or creative designers and artists. You probably tolerate, or even encourage, unconventional or "out of the box" thinking. Yours is a company that looks for new or bright ideas, and rewards or values people who produce them.

Whichever type your company falls in, the two key questions to answer next are (see chart below reproduced from Chapter **A**):

1. What processes are most crucial for your business to create value?
2. What knowledge assets do you need to deploy to perform or re-design those processes for maximum creation of value?



E6

KM STRATEGIES 6: Knowledge Networks

The multiplicative and synergistic potential of networks, the usefulness of knowledge, and the shareability of information come together in a powerful combination in knowledge networks.

After the Internet was just introduced in the Philippines in 1994, among my first enjoyments were online chats with my son then studying at the University of Southern California in Los Angeles and participating in discussion groups.

The latter introduced me to the Age of Networks.

A discussion group is an example of a knowledge network. It allows hundreds of subscribers using e-mail to exchange ideas, post queries, explore an issue from many angles, debate a proposition and generally share, exchange and synergize the huge information based stored in the heads of its hundreds of subscribers.

When you post a contribution, the list server automatically distributes your contribution to all subscribers.

In a moderated group, a moderator first examines postings to eliminate those that go against established rules and policies before they are broadcast to all subscribers.

As a subscriber, you keep receiving daily e-mails of others' postings, which you may or may not wish to respond or contribute. The number can vary from zero to as many as 20-30 per day in a big group dealing with a hot issue.

An Internet discussion group is a virtual community driven by commonality of interest. And there are thousands of discussion groups out there in Internet Land in as many areas of interest, from pedigreed cats to Singaporean politics to Philippine science and technology to creation spirituality.

Discussion groups have evolved to e-groups. E-groups have more capabilities: archived threaded discussions, common files, image sharing, chats, etc.

Knowledge networks are not new. Before the Internet came, some examples of traditional knowledge networks are professional, industry and academic associations; scientific, technological and trade conferences, fora and meetings; and university faculties. The last is a poor example because disciplinary boundaries and individual-based compensation and incentive systems do not encourage full multidisciplinary and transdisciplinary exchange of knowledge across the entire network.

A knowledge network allows:

- transfer of information and knowledge to those who need them;
- correcting, testing or validating assumptions against a wide variety of experiences;
- mining, pooling and comparing insights and learning;
- learning the latest findings and discoveries in an area of interest;
- exposure to alternative ways of viewing and understanding a phenomenon; and
- combining and synergizing many forms of existing knowledge to create new knowledge

Sharing knowledge with someone who then uses it is a process that creates value. In a network of n members, the potential value that can be created is proportional to $n(n-1)$ or roughly n -squared (n^2), which is Metcalf's Law. Metcalf's Law looks only at pairwise transactions in a network; it does not look into positive externalities from synergism among three or more network participants.

62 — Networks multiply the value created there by knowledge sharing

Now, assuming that willingness to share information is part of the network culture and transaction cost is low, then you can see the tremendous potential (including commercial potential!) of knowledge networks.

Web-based knowledge networks offer wider capabilities that traditional knowledge networks do not possess: speed, global reach, 24/7 asynchronous transactions, high-volume knowledge banking, many links to related content, and intelligent search engines.

Some corporations have cashed in on this principle of knowledge management, at least in three ways, by setting up within the corporation: (a) "communities of practice", (b) programs for seeking out and widely sharing best practices, and (c) knowledge sharing and knowledge banking systems in its intranet.

Here are some noted examples from abroad:

- By transferring best practices among its 13 wafer fabrication plants worldwide, Texas Instruments' Semiconductor Group led by Tom Engibous (now TI CEO) generated the equivalent of \$1.5 billion in annual increased fabrication capacity. The amount is equivalent to building a new fabrication plant.
- Chevron's system of sharing ideas and best practices in fuel savings and energy-management generated over \$650 million in savings in energy costs as of 1996. By comparing practices in the operation of gas compressors in their fields across the United States, a Chevron team found that they could save at least \$20 million a year by adopting practices already being used in their best-managed fields.
- By transferring knowledge between its Vehicle Operations plants, Ford was able to save \$34 million in one year. For example, a team in Ford's Chicago plant was able to reduce the amount of time it takes to install

front brakes by 15 seconds by using a best practice discovered by their counterparts in Ford's Atlanta plant.

- The 10% increase in new product related revenues and 50% increase in sales of new products at Buckman Laboratories is attributed to its Techforum — a venue formed over the company intranet for broadcasting queries, discussions of issues and sharing of ideas participated by CEO Bob Buckman himself.

Web-based knowledge networks are very new in the Philippines. An interesting pioneer is Knowledge Integration Network (KIN), which offers school-based subscribers access to Philippine educational materials — via Web-based or face-to-face for a — with educators in similar areas of interest, an electronic catalog of teaching materials and other educational content, and multimedia delivery of educational services.

In the Philippines, where education is highly valued and with well-developed educational infrastructures, the potential power of Web-based knowledge networks is still largely untapped by those who professionally deal with knowledge — the educators and human resource managers.

Let us watch how fast the more entrepreneurially minded ones will wake up to the new opportunities and do something about it.

E6a

KNOWLEDGE NETWORKS A: Communities of Practice

In their relentless drive to learn faster than competitors, many knowledge-based corporations are rediscovering a very common form of knowledge network: the “communities of practice” or CoP.

British Petroleum is one of them. Its CEO, Sir John Browne, says *“in order to generate extraordinary value for shareholders, a company has to learn better than its competitors and apply that knowledge throughout its businesses faster and more widely than they do.”*

We learn from reading and attending formal courses. We also learn through informal meetings with other people whose work and interests are similar to ours.

In fact, people naturally gravitate and form informal groupings with peers involved in a similar line of activity to consult about difficult problems, “talk shop,” exchange and compare “war stories” and share “tricks of the trade”:

- During coffee break, accountants talk about the latest administrative issuances from the Department of Budget and Management and share tips on how to effectively phrase justifications for requests for special releases.
- Young children ask classmates known to be experts in PC games like Myst or Nancy Drew for helpful tips and solutions.
- Professors discuss with peers the pros and cons of various methods of factor analysis, and why certain methods are superior for certain types of problems.
- Electronic repair technicians share hard-to-find circuit diagrams and practical diagnostic shortcuts.

John Seely Brown, VP and chief scientist at Parc Xerox, defines communities of practice as *“peers in the execution of real work...what holds them together is a common sense of purpose and a real need to know what each other knows.”*

Etienne Wenger of the Institute for Research on Learning at Palo Alto first applied this concept to business. He defines it as a group whose members *“are informally bound by what they do together — from engaging in lunchtime discussions to solving difficult problems — and by what they have learned through their mutual engagement in these activities.”*

Brook Manville, director of Knowledge Management at McKinsey & Co., defines a community of practice as *“a group of people who are informally bound to one another by exposure to a common class of problem.”*

CoPs occur within and across corporations. They cut across functional, SBU (strategic business units), team or project boundaries. Membership and relationships are voluntary, fluid and very personal.

Of course, they have no formal charter or purpose, tasks and leadership. They are often invisible and unnamed. They show up not in organizational charts but in ethnographers' sociograms or social network analyses.

Their existence is driven by basic human needs to learn and share experiences, solve problems, exchange trade or professional secrets, gain recognition of others and enhance self-esteem.

When I was Assistant Secretary for Policy and Plans at the National Security Council under former President Fidel V. Ramos, among my enjoyments was sitting over dinner with my other ASEAN counterparts and comparing facts and insights relevant to the probability of an expanded or ASEAN 10. Or drinking bottles and bottles of beer with Taiwanese intelligence executives and exchanging insights about mainland Chinese behavior patterns and probable intentions in the South China Sea. Or insightful readings of rival politicians and their next moves with stalwarts of the Lakas-NUCD. Or engaging in informed speculation about the stability of the Suharto regime with officials of an Indonesian think tank — who became my personal friends because we saw each other many times in regional security meetings and conferences.

What is now a formal network of academics and think tankers specializing in regional security — the ASEAN ISIS or Institutes of Strategic and International Studies — started as an informal CoP.

CoP is not some management ideal; they actually exist everywhere — within and across businesses, government, schools, churches and neighborhood communities.

74 — CoPs are everywhere;
harness them

They form part of what is known as “social capital.”

The most eminently successful, widespread and institutionalized community of practice is the community of scientific practitioners.

In the corporate world, what is important is that communities of practice — whether managers are aware of them or not — are operating as natural and effective vehicles for learning and knowledge sharing.

In facilitating transfer of “know-how” (knowledge as “knowledge for action”), they are unlike mere communities of interest that facilitate transfer of “know-what” (information as information about “what is”).

They are, therefore, the missing link between academic theories of organizational learning and down-to-earth business performance.

Some practical tips on how to nurture and encourage communities of practice within business organizations follow. These are culled from Wenger, who advised that *“managers...must work with communities of practice from the inside, rather than merely attempt to design them or manipulate them from the outside.”*

- Legitimize them: openly acknowledge their role in transferring learning across the organization. Allow members to devote time to participate, create opportunities for more interaction. But giving incentives and extra compensation may not be necessary and in some cases may ruin the social dynamics of the group.
- Encourage and support them: provide meeting facilities, travel for technical meetings, outside expertise, free space in the company intranet for communication; create opportunities for the emergence of new communities by more frequent meetings among employees with common tasks and skills.
- Recognize and leverage existing practices: formally acknowledge existing informal knowledge sharing practices and replicate or adopt them more widely.
- Define their strategic context: develop a clear understanding of how communities of practice and the knowledge they share can and do support the business strategy, gear provision of resources and support to help them relate better to the business strategy.
- Fine-tune the organization: revisit structures, policies and management styles as they facilitate or hinder the free growth of internal communities of practice. Micromanagement or over-institutionalization may smother the self-organizing and inherently self-sustaining dynamics of such communities.

This is a fine management balancing act between the mechanic metaphor (who wants to fix and manipulate people) and the gardener metaphor (who wants to nurture and empower people). Wenger put it well:

“Communities of practice do not usually require heavy institutional infrastructures, but their members do need time and space to collaborate. They do not require much management, but they can use leadership. They self-organize, but they flourish when their learning fits with their organizational environment. The art is to help such communities find resources and connections without overwhelming them with organizational meddling. This need for balance reflects the following paradox: No community can fully design the learning of another; but conversely no community can fully design its own learning.”

E6b

KNOWLEDGE NETWORKS B: Knowledge-Sharing Communities

In the knowledge era, we will be seeing more and more organized knowledge-sharing communities, the formal counterparts of communities of practice.

1

Online Science and Technology (S&T) Communities

The most eminently successful organized knowledge-sharing community is the constellation of communities of practitioners of S&T research and development. Communities of S&T practice possess all the elements of a knowledge network:

- value creation: members of the network benefit from sharing and synergizing knowledge, and
- positive network externalities: the benefit to a member increases as more members join the network.

But unlike other knowledge networks, communities of S&T practice possess additional advantageous elements:

- an exceptionally open and sharing culture that transcends three powerful boundaries that normally separate people from other people: political, religious and ethnolinguistic boundaries.

I like to think that the phenomenal growth of science and technology is evidence of a splendid quality of homo sapiens: predilection to create and share knowledge.

- continuously improved protocols and conventions for reality check, self-correction and cross-validation
- three centuries of track record of helping make the lives of billions of people better.

However, in the last 300 years, it suffered from big disadvantages:

- inefficient and infrequent means of communication (e.g. annual cycle of conferences, limited participation in international conferences),
- information- and knowledge-sharing and banking practices that are generally compartmentalized along disciplinary and specialist boundaries (e.g. highly specialized journals and R&D institutions), and
- high transaction costs (e.g. high cost of books and journals, high cost of participation in international conferences, expensive tuition in universities and graduate schools).

The Internet is fast erasing these disadvantages.

As a result, S&T communities have been migrating and colonizing the virtual world. To put it in proper historical and futuristic perspective, one of these S&T communities was responsible for the creation of ARPANET, the precursor of the Internet and most likely the development of next generations of the Internet will again be largely propelled by users from these S&T communities.

Indeed, the driving forces and history of the Internet itself are intertwined with this uniquely successful constellation of knowledge networks.

75 — A powerful combination:
knowledge networks plus Internet

2 E-Learning

Educational institutions are currently undertaking a parallel migration towards e-learning. The same driving forces and logic that push S&T communities towards the virtual world are also driving schools, colleges and universities. Moreover, they are beginning to pool their e-learning programs into super-clusters of e-learning communities.

E-learning is the topic in another chapter.

3 E-commerce

The logic of network externalities and value-creation from knowledge sharing are similarly driving e-commerce towards organized information or knowledge-sharing among trading communities. The evolution of websites from the early brochure models to interactive or virtual community models, and the evolution of commercial websites from simple transaction models to integrated supply chain models are both driven by this logic.

Stage 1: Brochure model: Surfers access such Web sites to get information.

The epitome of this model is the content-oriented portal. A good example is the early Yahoo site, which simply provided convenient access to desired information over the Web via a search engine-cum-taxonomy.

Income of Stage 1 Web sites is derived from advertisements, which in turn are driven by hits and eyeballs. Its basic premise is that Internet surfers are driven by the desire to know a correct but incomplete premise because Internet surfers are driven by more than just desire for information or knowledge.

Stage 2: Interactive models

Interactive Web sites encourage various forms of participation from surfers and two-way flow of information and control between Website and surfer: e-mail, posting of contributions and comments or reactions, chat rooms, discussion groups, questionnaires or surveys, sending greeting cards, designing and running your own Web site, e-groups, online games, etc.

Access to interactive Web sites is driven by a different motive: to interact with other people.

Of course, a portal that provides both the opportunities to obtain information and to interact with other people is better.

Income from this stage is often derived from subscriptions and membership fees in addition to advertisements and sale of goods and services.

The key to success at this stage is providing opportunities for human expression and interaction, sharing of knowledge and building communities based on shared interests or common practice.

The epitome of this model is the virtual community, which is exemplified by Web sites such as eGroups and technologies such as ICQ.

Stage 3: Simple transaction model

Amazon.com is the most famous example of this type of commercial Web site, which has the added capability to initiate and fulfill commercial transactions over the Web.

Surfers access these Web sites because they want to buy or sell something, and because they like the convenience offered by online shopping.

The epitome of this model is the Cybermall, which is exemplified by B2C Web sites in the Philippines such as myAyala, iBenta and eBili among others.

Stage 4. Integrated supply chain model

This model integrates firms that are usually already linked via traditional supplier-buyer relationships.

Stage 4 is becoming more than a Web site, for it is evolving to include customer-driven bundling of services, linkage with customer communities of interest, coordination of logistic operations across trading partners, etc.

It is a migration of brick-and-mortar trading communities to the virtual B2B world. BayanTrade and PhilBX exemplify this in the Philippines.

The pressure on CEOs like Carol Esguerra and Gus Lagman is to build virtual trading communities of sufficient critical mass as quickly as possible, and to induce existing vertical trading communities to migrate to the Web.

The key idea is simple: use the logic behind knowledge-sharing communities as a leveraging tool.

E6c

KNOWLEDGE NETWORKS C: Team Learning

Increasingly, many are realizing that knowledge is not only an individual, but also a group, capacity. Knowledge creation and learning are no different. Unleashing the generative power of teams through “team learning” is one of the difficult but rewarding tools in the arsenal of KM.

A 1996 survey by the American Productivity and Quality Center showed that transfer of best practices and training are the two most common tools of knowledge management.

Both tools look at individually held knowledge, a form of intellectual capital a company loses when an employee leaves the company.

Secondly, both tools involve merely transfer and re-use of existing knowledge, a limitation of many other popular KM tools such as peer assist programs, nurturing communities of practice, and knowledge banking.

For competitiveness or capturing new niches, more powerful tools are needed: the creation and application of new knowledge by teams, the effective collaboration within knowledge networks to produce innovations, group R&D, lessons learned meetings, and team learning.

Team-learning is the application-side discipline among Peter Senge's “Five Disciplines” of learning organizations. It is the art of bringing together in an explicit and productive fashion the collective intelligence of a group. It relies on four prior disciplines: shared vision, personal mastery, mental models and systems thinking.

Shared vision is well known and commonly appreciated among most corporations. As Collins and Porras found among enduring companies, this means holding to common core values and vision of their desired future and, more importantly, operationalizing and aligning everything in the organization to that vision.

Personal mastery, according to Senge and his colleagues at MIT, is holding a personal vision or ideal, and creatively tapping the energy and tension between ideal and reality.

We apply this discipline in our basic team development workshop by a vertical process. We guide each participant to:

- formulate their life mission statement from a review of their life patterns, inner directions and innate talents and virtues, and
- identify and commit themselves to doables in the overlap between personal and organizational missions.

We then complete the process with a horizontal component: interpersonal communication skills like centering, productive listening, awareness of motives and depth of communications, and clarity of each other's boundaries.

I found mental models a far deeper discipline of personal mastery. It covers many skills and abilities of inner work that require years of practice to become daily habits and that are requisite ingredients in participating in truly productive team learning:

- ability to watch and monitor your own thoughts, emotions and motives as they occur, which I call “internal attention” — the first module in most of our workshops;
- ability to be aware of your beliefs and assumptions and to acknowledge that they are simply that: beliefs and assumptions that can be changed if no longer useful;
- ability to be aware of your issues: reaction patterns that operate automatically and usually with strong emotions;
- ability to be aware of your inference processes, the often implicit gap between “what you see” and “what you conclude”;
- a deep respect for truth and inquiry, which includes a willingness to test your perceptions, beliefs and assumptions against reality and to change them if the weight of evidences and experience makes it necessary; and
- ability to disinvest your ego or disidentify yourself from “your ideas” and “your positions”, and thereby be able to balance inquiry and advocacy.

Systems thinking, Senge's “fifth discipline”, is a frame of mind that “looks at the forest”, not just the trees, or “sees the bigger picture.”

As a matter of habit, a systems thinker seeks alternative ways of looking at things and new ways of asking questions. He sees the world as interconnected and whole, with causal chains that often work in overlapping and nested loops. He admits that the way a person thinks determines how he acts, just as the way he acts shapes his reality. He appreciates deeply what Gregory Bateson says: “The major problems in the world today are the result of the difference between the way nature works and the way man thinks.”

The downstream or application discipline, team-learning, relies on open, explicit and democratic processes of group inquiry into and learning from practical work issues such as “what happened and why,” “what is the problem and what are the options” and “what doesn't work, what works and what works well.”

Productivity of team discussions and dialogues depends on practiced ability of team members to:

- suspend their assumptions and judgments;
- listen to another with least internal noise;
- monitor and manage their mental boxes, emotional issues and ego defenses; and

- treat each other with respect as colleagues with their own unique expertise, experiences and knowledge.

Building team knowledge can happen only when individual knowledge, experiences, judgments and assumptions can be “placed on the table” for everyone in the team to see, examine, subject to reality and utility tests, combine and synergize into a larger corpus of group knowledge — without the group being waylaid by misinterpretations, self-esteem issues, unseen mental boxes, and the like.

This is the rationale behind the horizontal component in our basic team development workshop.

A paradigm shift behind learning organizations is now clear: the shift from individual knowledge to group knowledge. This shift is being felt across organizations: HRD divisions metamorphosing into KM divisions, the growing role of project teams, strategic business units and skunk works, and entrepreneurs waking up to the power of information and knowledge networks to leverage capabilities and competitiveness.

76 — Wanted: effective tools for
group knowledge processes

E6d

KNOWLEDGE NETWORKS D: Corporate Universities

Another knowledge network is evolving to better serve the strategic business objectives of corporations: the on-line corporate university.

Corporate universities have been established by firms like IBM, Microsoft, Oracle, Sears, Mastercard, McDonald's, Volvo, GM, Disney, Sun Microsystems, Xerox and Motorola.

The standard-setter is Motorola University which has 400 full-time faculty, 800 part-time training specialists (e.g. program developers, writers, translators and instructors) in 99 sites over 21 countries, and over 100,000 students per year.

Many corporate universities have on-line training and training administration systems to connect geographically disparate employee-students and teachers/mentors. For example, Arthur Andersen Knowledge Enterprises operates its Virtual Learning Network. Boeing has FlightSafety Boeing Training International. Eli Lilly has its global Virtual Information System or ELVIS.

Jeanne Meister, president of Corporate University Xchange, defines a corporate university as *“a portal within a company through which all education takes place — an organization's strategic hub for educating employees, customers, and suppliers...(linking) an organization's strategies to the learning goals of its audiences.”*

Unlike training departments, which tend to be reactive, fragmented, and decentralized, she says a corporate university “pulls all learning in an organization together — the centralized umbrella for strategically relevant learning solutions for each job family within the corporation.”

The basic motive behind their establishment is to better align all knowledge and learning processes to business strategy.

Apparently, corporate universities fill a need not adequately met by traditional universities, business schools and business consulting firms. Some advantages and desirable roles of the corporate university are:

- responsiveness to the corporation's shifting strategies, personnel policies and business performance targets;
- short development cycles and just-in-time delivery of programs or courses;
- availability of corporate executives as resource persons especially in critical areas such as corporate values and vision;
- best positioned for addressing follow-up and sustainability requirements;
- implementor of knowledge management interventions, e.g. knowledge networking via their intranet;

- vehicle for change management (General Electric's Management Development Institute at Crotonville, New York was the vehicle for CEO Jack Welch's corporate-wide initiatives such as his Workout Program); and
- can align engagements of any external business consultants, vendor trainers or business schools to corporate requirements.

Corporate universities can be profit centers, serving clients within and outside the organization, or run on a fee-for-services basis. One-fifth of Motorola University students are from outside. The Management Education Institute of Arthur D. Little is run for profit, as well as to open doors for its consulting business. The Northern States Power Company makes money training its customers.

Beyond mere skills training, corporate universities can drive corporate change, reinforce corporate values and culture, and themselves contribute to strategic planning in a knowledge-based firm. The deans or chief learning officers who run corporate universities often report directly to the CEO and participate in upper management decision making.

There are several corporate university models in practice:

- fully operated by the corporation;
- collaboration with a university or business school, e.g. Sun University (of Sun Microsystems) and University of California at Sta Cruz' Corporate Training Department; British Aerospace with Oxford and Cambridge; and Daimler Chrysler with Harvard, Insead and Hongkong University. About two-thirds of corporate universities surveyed in 1999 had such alliances;
- run by corporate learning consulting companies for corporations, e.g. Corporate University, Corporate University Enterprise, CyberU, etc.;
- operated by a university for client corporations, e.g. Boston University Corporate Education Center (BUCEC) and Melbourne University Private; and
- consortia among several corporations, e.g. Talent Alliance (among AT&T, DuPont, GTE and Johnson & Johnson) and LearnShare (among General Motors, Owens Corning and 3M).

Feasible where resources are limited, the last model can be observed in the Philippines. An example is Asia Pacific College, an educational partnership between IBM Philippines and Shoemart (SM) Foundation. Another is Bank Administration Institute (Philippine Chapter) or BAIPHIL, a consortium of 49 member banks and financial institutions.

A recent survey of 100 corporate university deans conducted by Corporate University Xchange to discern future directions, found five major trends or expectations:

- align corporate education to business strategy;
- involve leaders as learners and faculty. In the sample surveyed, CEOs teach an average one day a month and 30% of CEOs teach;

- use technology to measure, track and accelerate learning. By the year 2003, they estimate that up to 75% of their education will be delivered intranet, satellite, Internet, videoconferencing, and/or CD-ROM;
- develop a range of innovative alliances with institutions of higher education;
- use the corporate university as a branded competitive advantage and a profit center.

In the United States, the number of corporate universities grew from around 400 in 1988 to more than 1,600 today, which includes about 40% of Fortune 500 companies. Corporate education is a \$60 billion market in the US.

According to Jeanne Meister, president of Corporate University Xchange, at the current pace of growth, the number of corporate universities will exceed the number of traditional universities by the year 2010.

The emergence and fast growth of corporate universities is evidence that executives appreciate more and more the importance of knowledge management for achieving strategic objectives.

Traditional universities, if they cannot learn how to respond faster to emerging needs of the knowledge economy, may indeed be overtaken by corporate universities.

I tend to this expectation seeing that corporate universities enjoy several competitive edges over traditional universities: global reach, market discipline or tighter feedbacks between business performance and learning resources, access to better technology and greater financial resources, focus, and agility.

77 — Learning institutions are moving closer to the workplace

E6e

KNOWLEDGE NETWORKS E: R&D Towards Future Knowledge Networks

The future possibilities of knowledge networks are too varied and far-reaching to discern, driven as they are by sheer economics of knowledge and the enabling power and multiplicative logic of networks.

A simple and reliable technology forecasting technique is to examine the R&D budget priorities of developed countries.

Let us take the U.S. In 1998 the National Science Foundation (NSF), a major federal R&D granting agency, started an R&D program to extend the frontiers of knowledge networking. The goal of the program is *“to build the scientific bases of attaining new levels of interactivity and flow of information and knowledge among people, organizations, and communities.”*

An amount of \$62 million was allotted in 1998 to the NSF Knowledge Networking program to *“support multidisciplinary research on developing and employing the next generation of communication networks, associated information repositories, collaborative technologies, and knowledge management techniques to gather, create, distribute, use, and evaluate knowledge in new and secure ways...(including) research on the human, behavioral, social, and ethical dimensions of knowledge networking.”*

78 — US R&D: a window for discerning technological futures

Knowledge networking, as in most knowledge management systems and interventions, basically involves two types of problems: people-to-information and people-to-people interfaces.

People are the crucial element in knowledge management. Thus, the NSF R&D program aims to push the envelope of “the human infrastructure that underlies knowledge networking.”

Initial payoffs are expected from more effective multidisciplinary scientific collaboration to solve complex societal problems.

NSF identified three examples of complex applications that could benefit from its Knowledge Networking program: response to national disasters, airline safety and management of endangered ecosystems. Distant payoffs are expected in cross-cultural and cross-domain interactions to build shared knowledge and social values.

Science and technology R&D have been very successful but mainly monodisciplinary. Synergizing across geography and disciplines should generate greater successes. However, cross-cultural and interdisciplinary boundaries present human problems.

Having crossed disciplinary boundaries myself, I know the deep differences between scientific disciplines. From an undergraduate preparation in the physical sciences I shifted to the life sciences for my graduate degrees and then shifted to the social sciences during most of my professional life. In the last several years I have been shifting disciplines, again, this time towards the applied behavioral sciences.

Very substantive differences separate the scientific disciplines, for example, in language, mental models, scale of observation and methods of verification. Physicists and transpersonal psychologists view reality very differently, yet their respective mental models have their own usefulness. I see potential gains in scientists' capacity for knowledge creation and application once cross-disciplinary bridges and syntheses tap yet unseen synergies.

I anticipate that in the coming years new tools and perspectives to be developed for cross-domain knowledge networking will benefit not only collaboration across business organizations, but also cross-pollination across other knowledge communities: scientific, academic and civil societies.

Numerous online knowledge networks are evolving among scientific communities, applying various networking methods.

One model with numerous variants is the research consortium. In academic communities, the library consortium and the e-learning consortium are examples.

The Library Link operated by the Filipinas Heritage Library illustrates the former. It links to Ateneo de Manila University, De la Salle University, University of Santo Tomas, University of the Philippines Creative Writing Center, Academic Libraries Information Network in Mindanao, Inc (ALINet) and Centro Escolar University.

The California Virtual University, a consortium of 125 colleges/universities in California offering a pool of more than 2000 online courses, is an example of the latter.

Library and e-learning consortia pool resources and give convenience for a user (many-to-one interaction) but do not tap the multiplicative power of networks (many-to-many interaction).

This is true of clearinghouses, information consolidators/banks or information locators. Many civil society "networks" are just registries (many-to-one) or publishers (one-to-many), such as the Global Ideas Bank of the Institute for Social Inventions. Some "knowledge networks" aim to preserve rather than to create knowledge, such as the Alaska Native Knowledge Network about indigenous knowledge systems of native Alaskans.

Adding enablers for collaboration such as discussion lists and chatrooms can begin to tap the generative potentials of many-to-many interaction, but I expect more developments in this area. Emergence of e-groups hint at future directions. Online

video conferencing, real time translation across languages, common e-whiteboards and other tools made feasible by higher-bandwidth connections are around the corner.

These technologies do improve the quality of physical connectivity, but I anticipate that other technologies will have to be developed for improving the quality of human and behavioral interactivity and collective creativity.

The inexorable logic behind knowledge networks could bring more exciting innovations in the future.

E7

KM STRATEGIES 7: Go capture and culture!

New knowledge is like nutrition to a knowledge-based organization.

Slow down or stop “eating” and the knowledge-based organization dies. A survival strategy of knowledge-based organizations is, therefore, the continuous and relentless search for new knowledge.

“Get Innovative or Get Dead!” is the title and “Building Competitive Companies for the 21st Century” the subtitle of a shocking and instructive book by Matthew J. Kiernan. I said: “shocking”, because the author likes to jolt his readers into appreciating the needed shifts in business thinking.

His message is simple: depending on old ways of thinking and doing things, or “business as usual” is the route to business oblivion.

If you have read this book up this point, then I would guess you like new ideas. You are open to new ways of looking at things, new mindsets.

I was chatting one day with a pharmaceutical manufacturing executive about the competitive threats facing his industry, and how much depends on top management. “*Management is the cause, all the rest are effects*” he said. I hastened to add to his quotable quote, “*And managers’ mindsets are the cause and all their decisions are effects.*”

An example of a mindset is the following assumption: “*We are not a knowledge-based company, so our company does not need new knowledge.*”

Let us step back and reexamine this assumption.

Two of my KM students at the Technology Management Center, Ronald Misa, the GM of Motortech Inc., and Augusto Arkoncel, a sales executive at Petron, found that Philippine corporations which topped various polls have market values about two to four times their book value: ABS-CBN (3.9), Globe Telecom (3.8), BPI (3.0), PLDT (2.5), Ayala Corp. (2.4), Jolibee Foods (1.8) and San Miguel Corporation (1.6). These are rough but sure indications that the magnitudes of their knowledge assets are very, very substantial – ranging from 60% to 290% of their respective book values!

So, how do knowledge-based companies get their food? People produce food in two ways: capture (hunting and gathering) or culture (farming). Similarly, knowledge-based companies source new knowledge either by capture or by culture.

Executives of well-managed Philippine companies mentioned above are, in effect, successfully building their knowledge assets using sound management principles without necessarily calling them “knowledge management.” In other words, what

is new in KM is the conceptual framework or mental model which focuses on knowledge assets as such.

Capture of Knowledge

Some traditional ways of capturing knowledge are:

- hiring talented people, experienced technicians and high-performing executives;
- acquiring more efficient technologies;
- forging strategic partnerships for complementing each other's competitive strengths;
- picking up industry intelligence and gossip from coffee shop meetings; and
- sending a staff to a technical conference or training abroad.

Some methods of capturing knowledge developed by KM practitioners are:

- identifying, codifying and re-using best practices;
- apprenticeship of understudies under a master technician before he retires or resigns (transfer valuable tacit knowledge);
- supporting associations among specialist technicians (informal transfer of insights, what works best, useful tricks of the trade and other informal knowledge within a "community of practice");
- storing personal data, transactions and preferences of every customer in a database for customization of services or product improvement; and
- intelligent search engines, which discover needed expertise or knowledge using artificial intelligence methods.

79 — Much of KM is still in the hunting-and-gathering stage

Culture or Creation of New Knowledge

Some traditional ways of culturing or creating new knowledge are: product R&D, design of new packaging, and process review and reengineering.

Some methods of culturing or creating new knowledge developed by KM practitioners are:

- discovering and codifying what works well and what works best using a variety of review or reflective techniques: after-action review, lessons learned meeting, retrospect, post-mortem, Deming cycle, learning history, etc.;
- "workarounds" or informal improvisations and tacit work improvements;
- "data mining" softwares which help experts detect and find meaning or useful patterns from production, sales, employee or industry databases;
- continuous work or process improvement using individual "learning-in-action" or team-learning methods;
- codifying and banking of work templates; and

- programmatic establishment and nurturing of a learning and sharing culture within the organization.

Personally, I feel that the last-mentioned method is the most challenging KM strategy in the relentless quest for new knowledge. The central theses are:

Because people are the crucial assets – or liabilities – in 21st century corporations, then psychological, political and cultural savvy are demanded of 21st century managers.

Knowledge-based corporations – in order to survive and excel must learn to become free and open learning organizations – virtual living organisms capable of precisely sensing itself and the environment, and constantly responding, adapting and learning to go quickly towards where it has set itself to go.

Employees and especially executives must become themselves learning and reflective individuals, where daily actions and personal experiences – whether labeled as successes or failures – are all transformed into learning opportunities, and where personal behavior, motivations and mindsets are constantly reexamined and improved.

Peter Senge, in his foreword to Arie de Geus' book, "The Living Company", observed:

"...the famous study done by Royal Dutch/Shell found that most (Fortune 500) corporations die prematurely – the vast majority before their 50th birthday. The majority of large corporations suffer from learning disabilities. They are somehow unable to adapt and evolve as the world around them changes."

80 — Corporations die from
learning disabilities

E8

KM STRATEGIES 8: Create Knowledge

Some practitioners of knowledge management say that managing knowledge that is already there is not as important as creating new knowledge. New knowledge or learning that creates a new product or market niche or leads to a novel enterprise idea – can create greater value than shuffling around the same old knowledge to produce the same old product.

The future belongs to those who create change and it is learning or knowledge creation that does that.

Failure to learn is among the four reasons why Fortune 500 companies die. Change is becoming rapid and complex in the knowledge era. If the rate of learning or innovation of a company lags the rate of change of its environment, that company is at risk.

Listen to some wise statements:

“...corporations die prematurely – the vast majority before their 50th birthday.. [due to] learning disabilities.”
– Peter Senge.

“Good companies manage change. Great companies create it.”
– Peter Lockett

“... the major task in society and especially in the economy... [is] doing something different rather than doing better what is already being done.”
– Peter Drucker.

One of the most popular KM tool, transfer of best practices, is an example of what I call mere shuffling around of old knowledge. Transfer of best practices can and do result in higher productivity, but it is merely copying old knowledge. What we need is innovating “next practices” – or taking a leap beyond everybody else.

Best practice is backward-looking, “next practice” is forward looking. Transfer of best practice is knowledge management, inventing “next practices” is knowledge creation.

Is there something more important than inventing “next practices”? I think so.

Knowledge creation can take place at several levels:

- operations (more tactical) – where “next practices” apply
- business process (tactical) – also where “next practices” can apply
- product (the most common level of application of innovation)
- market niche (strategic)
- enterprise paradigm (more strategic)

Knowledge creation at the level of market niche or enterprise paradigm is the most strategic application of knowledge management.

Here are some examples.

- The Swiss watch industry was clobbered by the Japanese digital watch industry. It almost died. Until Swatch came. Swatch is a new business concept; they are not in the business of selling timepieces – they are selling fashion, distinction and personality!
- Similarly, Rolex is not selling mere watches; they are selling jewelry and prestige.
- Disneyland is more than an amusement or theme park; it is where people go for imaginative even magical experiences.
- Harley Davidson is not selling just motorcycles, they are selling machismo. According to a Harley Davidson executive, “what we sell is the ability for a 43-year old accountant to dress in black leather, ride through small towns and have people be afraid of him.”
- The thrill of driving a sports car is not only about speed, machismo or prestige. Gian Luigi Longinotti-Buitoni, CEO of Ferrari-North America, invented the term “dreamketing” which he says is “touching the client’s dream and promoting the dream, not the product [sports car]”.
- Similarly, Jean-Marie Dru said that “Club Med is more than just a ‘resort’; it’s a means of rediscovering oneself, of inventing an entirely new ‘me’.”
- And while we are at it, I can surmise that Osama bin Laden is not telling new Al Qaeda recruits about terrorism or getting themselves hurt or killed, he is telling them about what awaits them – paradise in the afterlife.

I facilitated a KM workshop among a group of 20 top executives of a development management consulting and training firm. The module on “Enterprise Innovations” evoked the most energy and ideas from the group.

81 — Enterprise innovation:
strategic knowledge creation

It was the module where they recognized and freed themselves, although temporarily, from the straitjackets of their mental boxes. It was also the module where I saw how left brain thinking (e.g. quick judgments of lack of feasibility) prematurely interferes with right brain creativity, or where more left-brain participants constantly check their more right-brain colleagues. It was also a demonstration of how to apply knowledge creation for potentially dramatic impacts on revenues.

Every new technology, new book, new movie, new legislation, new building – every innovation starts as a tacit idea in the mind of someone. Successful innovation and learning is a delicate journey from an “aha!” experience in the mind of one or more individual to an explicit group knowledge embedded in a new product.

Because the pace of global change is accelerating and its nature is getting more complex, Michael Beer and Nitin Nohria in “Cracking the Code of Change” observed that organizational change itself has to be less and less top-down, rigid or structural and formalistic (the mechanistic Theory E). Instead it has to be more and more balanced or mixed with cultural or behavioral, participatory or motivational in order to enable learning at all levels of the organization (the organic Theory O).

82 — Organizational change: mix of
mechanic and gardener metaphors

How to create an organizational context that is learning and innovation oriented, or that nurtures this tacit-to-explicit and individual-to-group knowledge journey is among the more challenging and potentially more fruitful applications of knowledge management.

E8a

CREATING KNOWLEDGE A: Knowledge Types

Knowledge exists in varied shapes and forms.

First, **knowledge may be “hard” or “soft”**, with many other shades.

My first rewarding experiences in interdisciplinary collaboration were in undertaking environmental impact assessments. Experts in the physical or hard sciences, the biological or life sciences, and the social/behavioral or soft sciences exchange and cross-fertilize their knowledge and experiences. Coming from an undergraduate preparation in physics, one of the first insights I got from this collaborative work is that technology is not just “hardware”.

Stuart Conger of the University of Saskatchewan introduced the broader concept of “social inventions” to encompass physical tools, processes, organizations and conventions. To this I added two more categories of tools: symbols and biological tools. Since knowledge is defined as capacity for effective action, then it encompasses social inventions and technologies.

An organization can be viewed as social invention or technology because it is a means to an end; organizations such as the university, factory, United Nations, change management team, virtual offices and “skunk works” are means to an end. Social invention can take the form of conventions and protocols such as Robert’s Rules of Order, precedence of option generation over feasibility rules in creative problem solving, and right-hand driving. They can be symbols such as company logo, systems digraph, Tony Buzan’s “mind maps”, trophy for PIC/QCC teams and management-layer social network analysis or sociogram. Examples of biological tools (call them “wetware”) are genetically-modified organisms, biological pest controls and vaccines.

83 — Knowledge can be hard, soft,
wet or subtle

Second, **knowledge may be explicit or tacit**, with many shades in between.

We have methods and methods of recognizing, organizing, transferring and applying explicit knowledge — what people in the academe and scientific communities spend their lives developing and perfecting. The challenge in the knowledge economy is how to do the same for tacit knowledge — knowledge that is informal, unnoticed and undocumented.

Pattern of customer complaints is information hidden in the heads of staff manning the Customer Relations Desk. This tacit information becomes explicit knowledge once codified and structured for the use of Product R&D Division staff tasked to create greater customer value.

Take an accounting clerk who can write and use Excel macros to make her work easier. Her boss and officemates may not notice it but the impact of this tacit knowledge on her productivity is real. The nuances of emotional intelligence of a business development manager does not show up in her biodata and may not even figure in the conscious calculations of her boss, but the strategic alliances she nurtures for the company are crucial in winning and implementing big projects. This, too, falls under tacit knowledge.

We can bet that part of the “assault weaponry” of a high-performing PR manager is an address book and his personal friendships. His list of names and telephone numbers is codified, but it is not part of the formally organized and accessible information bank of the company — it is explicit but unshared knowledge.

Sharing and surfacing of tacit knowledge begins when you ask a high-performing knowledge worker “how” and “why” questions. It shows up more in open forums after the usual cut-and-dried Powerpoint presentations. You get it when you sit and enjoy an informal chat over coffee with a CEO as she lays out her version of the “bigger picture.”

Once tacit knowledge is shared and codified, then knowledge management starts to blend with information management.

Information management is about groupware, case/project data bases and case-based reasoning systems, document taxonomies, search engines and simulation models. Information management deals with manipulating information objects and with people-to-information interfaces; knowledge management deals with both people-to-people and people-to-information interfaces.

Knowledge management includes information management, and much more. It is also about willingness to share, openness to examine mistakes as well as best practices, productive listening, pooling insights and reconciling mental models. It is team learning and creative collaboration. It is synergy and cross-fertilization of experiences.

Third, **knowledge may be strategically useful or remotely useful**, with numerous shades in between.

The most recognizably useful are company patents, copyrights and trademarks. Included in this group is the patentable business model — such as Amazon.com’s “One-Click” innovation for making convenient on-line orders.

The next layer of knowledge covers business processes, work methods and established work flows, data bank, analytical frameworks, “soft” tools such as document templates and other trade secrets. They are not patented or copyrighted but they form part of the intellectual capital over which the company has some proprietary rights and controls.

The third layer covers non-proprietary knowledge: employee talents, attitudes and insights, established relationships among work teams, and a host of uncodified knowledge hidden inside the heads of employees.

The lowest layer of usefulness consists of open or public stock knowledge that abounds in the Internet, libraries and publications.

Degree of usefulness to stakeholders and customers is what separates the layers. The “trick” is to bring information from lower to upper layers:

- mining open sources of information for data and insights useful to the business enterprise;
- mining, synergizing and codifying hitherto tacit knowledge; and
- bringing structural capital into patentable or more mature forms.

The “final trick” is bringing all these layers to effectively bear on the company’s strategic value propositions: deploying the right knowledge for creating maximum value for the company and its customers.

E8b

CREATING KNOWLEDGE B: Problem Finding

Usefulness transforms data and information to knowledge. Creating knowledge, therefore, should start from unmet needs of potential users.

In 1986, Philippine Invention Development Institute director Fidelino Adriano and I conducted a study for the World Intellectual Property Organization. I interviewed Filipino inventors, some commercially successful and some not quite so. One striking difference we noticed is that successful inventors do not start working on a project unless he sees a clear market need or actual demand from a user(s).

The Department of Science and Technology (DoST) holds annual inventors' fairs. I am always amazed at so much effort some inventors devote to reinventing the common kitchen stove. There are stoves and stoves displayed every year. These inventors are very good at problem solving, but maybe not so good in problem finding.

The problem with many R&D projects that get bogged down at the commercialization stage is not lack of promotion or marketing. The problem occurs much earlier, during the problem identification (i.e. problem finding) stage.

The researchers and inventors — the technology producers — are the experts in problem solving. But the users of technology — entrepreneurs and businessmen who make technology choices — are the experts in problem identification. Good entrepreneurs are good because they can “smell” a good business opportunity. They are good problem finders. Really, problems and opportunities are two sides of the same coin.

84 — Problem finding and problem solving are different processes

I attended a wedding once at the San Agustin Church (a centuries-old cathedral in western Metropolitan Manila). It is an open, huge and beautiful church. It was summer and it was very hot and humid. That was giving people waiting for the bride a problem. Now here comes a *tindera* [lady vendor], selling *abanico* [fan] made of *anahaw* [a variety of palm]. She did sell her fans that day.

I was in Marinduque (a small island south of Luzon) a couple of years ago in one of my rural forays. We had a workshop in one of the schools. A local official was telling me about their problem of having to employ a grass cutter to keep the weeds in check in the large school grounds. Then, someone suggested raising goats.

Change your viewpoint and suddenly the problem becomes an opportunity.

While waiting for my plane in Vienna recently, I picked up a UK IT publication and scanned the many dot-coms advertising their wares. Again and again, I saw how a market need leads to a new business model:

- checkyourbank — helps you check if your bank is overcharging you;
- trainline — books train rides for you online;
- filemaker — organizes knowledge for a virtual work team;
- top-file — registers your URL in search engines every month;
- mgisoft — allows surfers to zoom in and examine details of products;
- deymo — helps you manage your Web site from anywhere in the world;
- netnames — watchdog services for your domain name security.

Problem finding is akin to creativity. Both require what educational psychologists call “divergent thinking,” the mental process employed in those types of problem situations where many solutions are acceptable. Application of rules to arrive at the (single) correct answer is convergent thinking.

Scientists and researchers are trained more in convergent thinking. Divergent thinking is more common among architects, designers and artists.

Problem finding is an attitude and a skill. It is an attitude of being watchful and sensitive to — rather than ignoring or running away from — problems. It is a skill of seeing and sensing problems so subtle or common that they escape the conscious awareness of most people.

Problem-finding skill is a quality of the entrepreneurial mind. While going down an elevator with an entrepreneur friend, he noticed that the building had so few tenants that no cafeteria concessionaire is willing to come in. Employees of company tenants get wet during the rainy season walking out to lunch.

He mused, “*Apin, someone should invent a lunch-on-wheels equipment that can easily fit this elevator and display/distribute food throughout this building.*”

While sitting in a restaurant in Makati Greenbelt (a mall in central Metropolitan Manila) with some DoST officials I led the group into a problem-finding mode. With customers’ eyes, we saw the following problems in a restaurant. Later, I thought of corresponding innovations (in parentheses):

You get to know the menu and prices only after you have entered and sat down, when it is too late and embarrassing to leave after discovering that they are not to your satisfaction or pocketbook affordability (menu and prices posted outside the door, or accessible via WAP-enabled cellphones).

It takes time to ask for the menu, make your choices and transmit your order to the cooks (a touch-screen terminal built into each table or a portable Bluetooth-powered menu terminal available upon entering, which transmits your orders directly to the cooks and the cashier; the same terminal can display an itemized updated bill).

The salt, sugar, pepper, soya sauce, spices etc. clutter the table and get in the way (containers all fit a single portable small-footprint dispenser).

If a smart problem-finder recognizes a problem or unmet need that is so completely new or is yet unseen by anyone, then he has the first opportunity to devise a profitable business solution and create a new business niche all to himself.

85 — Problem finding: looking for customer needs

86 — Stake your own business niche by meeting unmet needs

“A different, and I think more powerful way to compete is to avoid competition altogether.”

– Raychem Chairman Paul Cook

“...the major task in society, and especially in the economy...(is) doing something different rather than doing better what is already being done.”

– Management guru Peter F. Drucker

E8c

CREATING KNOWLEDGE C: Discover Your Limiting Assumptions and Blindfolds

“You can judge your age by the amount of pain you feel when you come in contact with a new idea.”
– John Nuveen

Why are some people creative and others are not? What limits creativity?

Below is a list of events or capabilities from a longer list I use in my innovation workshops. For each event or capability, test yourself by answering the question: “Is this event or capability impossible, unlikely or probable?”

Within the next 50 years, many people can...

1. ...choose the sex and facial features of their children.
2. ...read a 500-page novel in less than 10 minutes.
3. ...communicate regularly with dead relatives.
4. ...fly from San Francisco to Tokyo in less than 2 hours.
5. ...verbally command a kitchen robot to prepare one of 5,000 dishes.
6. ...engage their guardian angel in a conversation.
7. ...be operated by a surgeon who is halfway across the globe.

Count how many “impossibles” you answered. How many “unlikely”? How many “probable”?

This questionnaire is not intended to test whether you are right or wrong. At this point, nobody knows for sure what will happen in 50 years.

The intent behind the questionnaire is to show that we each have different assumptions about what we think are “impossible” – assumptions that are pure and arbitrary guesses. We all have our own different ways of drawing the boundaries between our “impossibles” and our “possibles”. And – here is the clincher – the way we draw these boundaries can expand or limit our options and therefore our choices.

People who drew their boundaries of “possibles” far wider than others were the people who first conceived the technologies that now surround us and make our lives easier. They too introduced new business models and new enterprise configurations that create wealth, employ people and, of course, make them richer.

Creative people are good at “divergent thinking” which is the mental process you do in solving those problems that admit of many solutions. Fields like architecture, fashion design, industrial art and advertisement encourage their practitioners to be divergent thinkers. On the other hand, law, mathematics, accounting and information systems are examples of professional fields that do not.

In my creativity and technological innovation workshops, I have been observing that younger people perform better than older people in the exercises. My guess is older people, because they have more experiences about what works and what does not work, immediately kill ideas – their own and those of others – that in their judgment are not feasible or workable.

A better approach is a two-step process: (1) generate freely as many options as possible while withholding the application of feasibility rules, and then (2) eliminate options using feasibility rules. This is the divergent-then-convergent approach. The tendency of the adult mind is to kill ideas outright in Step 1 by immediately saying “that will not work”.

Watch this tendency of the adult mind as you do the following exercise: List as many ways of getting a fruit from a tree as you can think of.

If your list is less than 10, something is limiting your divergent thinking. Maybe your boundary of possibles is too narrow, or you apply feasibility rules too early. Few adults older than 40 years can list more than 20 ways of getting a fruit from a tree. Grade school children’s lists exceed 30!

Ever heard of this puzzle? There is an employee who works at the 50th floor of a building. Every morning he takes the elevator to the 44th floor and then walks up 6 flights of stairs to his office. Why does he do that? What is happening here?

There are many correct answers to this puzzle but there is one answer with a very surprising twist! It is surprising because your mental box is preventing your mind from coming up with that answer. Got it? Email me for help if you cannot get that answer.

The way we perceive and frame a problem also determines the range and type of corresponding answers and solutions. Our perceptions take place from the vantage point of our invisible but potent mental boxes. Have you ever asked yourself or your office colleagues, “Are we asking the right questions?” “Are there other ways of looking at this problem?” If you have not asked these kinds of questions, then it is likely you are habitually locking yourself away from a wider choice of solutions.

Here are some ways to stretch your perspective on a problem. Ask:

Is it only a symptom of a deeper cause?

Is it part of a larger problem? Should it be solved simultaneously with other problems it is tightly linked to?

Why didn’t we see the problem earlier?

If the problem is a deviation from a norm or expectation, what precisely is that norm or expectation, and are they still valid?

How are our emotions, attitudes and egos affecting our sense of balance or proportion in viewing the problem?

Whose problem is it? Who says it is a problem and who else says it is not?

Does it have to be fixed now?

What opportunities does the problem create?

It is not too late to free yourself from whatever limits your creativity. Start by picking up any book by Edward de Bono.

87 — A 21st century skill:
discovering your blindfolds

E8d

CREATING KNOWLEDGE D: Developing Core Competency

The transition from less useful to more useful knowledge can take the form of creative team learning of core capabilities.

Let me tell you a story that started years ago, but which illustrates a dynamics in some knowledge-based companies.

In the late 1970's several professors from the University of the Philippines organized an environmental consultancy firm. The group was interestingly multidisciplinary: botany, marine biology, zoology, meteorology, physics, geology and business management.

I brought with me an undergraduate preparation in physics and mathematics, graduate degrees in physical biology and work experiences in social and policy research. I was working for a social/policy think tank reporting to then Executive Secretary Alex Melchor.

In our "Tuesday Club," we shared and synergized our varied technical expertise over bottles of beer. We learned each other's technical lingo. We migrated insights and frameworks across disciplines. We challenged each other's premises. It was "team learning" years before Peter Senge used the term in the context of a learning organization.

First, we borrowed, adapted or developed useful work routines. Various skills in mapping were brought in. The botanist produced his vegetation map of the study area. The geologist brought in soil maps from the Bureau of Soils and refined or validated them on the field. He brought in BTSM (Bureau of Technical Surveys and Maps) maps, aerial photos and a stereoscopic viewer to draw an updated land use map. I used quantitative modeling to estimate and construct alternative scenarios of total biomass. Using factor analysis on the needs and expectations of our client's customers, I identified what brought them to patronize the area. The first or routinization stage was driven by project requirements.

Personal computers were still unknown and programmable calculators were quite bulky and expensive. But we decided it would be more impressive to digitize our maps and present computer print-outs in addition to hand-drawn maps. Besides, maps in digital form are faster and cheaper to correct.

Thus, we developed new capabilities. The first or routinization stage took open or public knowledge resources and used them for efficient work routines. These routines are not openly available, except within the academe. The second stage is the organizational capability learning stage. Work routines belong to individuals, but capabilities belong to the company. Leveraging human capital across an organization yields organization capabilities that add to structural capital. We

developed company trade secrets. We built a culture of team collaboration for learning and innovation.

At that time, an American architect Ian McHarg described in his book “Design with Nature” a technique for urban and regional planning, called: “sieve mapping.” McHarg first drew various maps on transparent plastic. He then physically overlaid two or more plastic maps to visually identify best locations for specific land uses. For example, overlaying a slope map, a vegetation map and a built-up areas map shows the best location and orientation of an airport runway — a one-kilometer stretch with near-zero slope and least trees and buildings that have to be destroyed.

Our company president thought of a bright idea: computerized sieve mapping, where two or more maps are digitally weighted and combined into a “decision map” corresponding to a specific locational decision. We used information technology to improve a manual land use planning tool. We used a mainframe computer to test run the method for the Task Force on Human Settlements. When PCs appeared in early 1980’s, I wrote a program in DOS-based BASIC. It became an important selling point with our clients.

Thus, the third stage was to develop core capabilities. Informed by market considerations, we innovated and combined our capabilities to develop one with strategic usefulness. It is the competitive environment that singles out which capabilities at any given time are core capabilities. After passage of a presidential decree in 1979 requiring environmental impact assessments (EIA) boosted the Philippine market for environmental consultancy services, our company had strategically positioned itself with core capabilities we had developed.

88 — The competitive environment defines what capability is “core”

Director Claudio Ciborra of the Information Systems and Organization Department, Institut Theseus in France, who described the three stages of core capability building, calls the third stage: the strategic learning stage, because strategic considerations are brought into play in selecting what application best contributes to the firm’s competitive edge. According to *Fortune Magazine* editor Thomas Steward, “*knowledge assets...exist and are worth cultivating only in the context of strategy.*”

According to Ciborra, a capability is core if it is: valuable, rare, imperfectly imitable, and without strategically equivalent substitutes.

Core capabilities are not so easy to copy because:

- (a) They depend on the chemistry of a team, and
- (b) They are applied in the specific organizational context and culture of the originating firm.

Epilogue of the story: Our core capability was overtaken by new innovations. IBM

developed Geographic Information System (GIS) software for processing Landsat remote sensing data, which allowed more sophisticated digital manipulation of satellite data. Our company president later started a successful GIS-based company.

Moral of the story: In the dynamic IT industry, core capabilities must be continuously developed or else they are displaced by new innovations of competitors who are better in team learning and team development of applications.

“The productivity of (human) capital depends on how effectively people share their competence with those who can use it.”

– Andrew Carnegie

E8e

CREATING KNOWLEDGE E: Ask “What Is Working Well”?

Many people know what works well in particular situations at work, at home and at play. When this tacit knowledge is codified or made more explicit, knowledge creation occurs, and when codified knowledge is transferred to others who can apply it, value creation occurs.

Let us take a common, practical work situation: listening. Listening is a skill crucial in building teams, in turning teams into learning organizations, and in turning learning organizations into creative hotspots that can blow the competition away.

Many people do not know how to listen. To elicit tacit knowledge from skillful listeners we ask, “What constitutes best practice in the art of listening?” Consciously addressing the question of “what works well” in a given situation is a genesis point in knowledge creation.

At the CCLFI.Philippines, we always ask such practical questions. We look at common situations in life and work, and ask “What works well?” We read books and attend workshops. We ask people who seem to demonstrate a “best practice” or at least a good practice. We observe, discuss and learn from our own and others’ tacit knowledge. We bring out, combine or reconcile our experiences and subject them to further reality check. We call this process “inner R&D.” Its intended outcome is a useful tool for living which we then convey in our workshops and lectures.

Inner R&D illustrates knowledge creation: the conscious, planned and systematic transition from unrecognized tacit knowledge of what works well to useful explicit knowledge others can use.

The amazing thing is that many people possess considerable tacit knowledge that proved useful to them at work, at home and at play. We have hundreds of these locked up in our heads!

But because they have not been recognized as such, their immense value to many other users remains an unrealized potential.

89 — Look for, and document,
unrecognized knowledge

Allow me to repeat myself because this is very crucial in knowledge creation. In a work situation, the technique is to start by consciously addressing the question of “what works well.” Next, we convert tacit to explicit knowledge and transfer them to those who can profitably apply them.

Tacit skills are either embodied unconsciously in talented people or embedded in unrecognized excellent work routines.

They are unseen, not because they are hidden from view, but because we do not look for them or we do not know how to look for them. Once this problem of lack of awareness is hurdled, surfacing tacit knowledge requires innovative people-to-people and people-to-information processes and programs. There are many corporate programs that have worked well for this purpose:

- Documentation and replication of best practices across work teams, divisions or firms such as Ford Motors Best Practice Replication program, the US Army's Center for Army Lessons Learned, LM 21 Best Practices of Lockheed Martin, and the Best Practice Sharing Program of Texas Instruments;
- Group critique of a process to gather insights on what does not work and what works, and what works better, such as the Inner R&D of CCLFI.Philippines, the After Action Review (AAR) of the US Army, and the "lessons learned" meetings of Bechtel;
- In-house mentoring, such as British Petroleum's Peer Assist Program;
- Collection of work products and templates from past projects, such as Ernst & Young's PowerPacks and Chevron's Project Development and Execution Process;
- Open work-related questions of the type "Does anybody know...?" broadcast via company LAN/WAN such as Techforums of Buckman Laboratories and Compaq's local e-mail; and
- Process documentation by external experts, such as the Learning History method developed by Art Kleiner of the MIT learning organization group of Peter Senge.

During the industrial age, we mined eagerly for gold, platinum and other precious minerals. In the knowledge era, tacit knowledge will be the object of "knowledge mining."

90 — Object of knowledge mining:
tacit knowledge

In hierarchical, command-and-control industrial-era organizations, clarity of policies and directives and faithful obedience were valued. In more flat or horizontal knowledge-era organizations, people skills such as listening and sharing are important.

The emerging paradigm is that knowledge is both an individual and a group phenomenon.

Let us go back to listening.

Listening is so common we tend to ignore how important this skill is. Once we are aware and acknowledge the importance of listening, the next step is to look for best practices. Worst practices can also yield useful data.

I am sure my readers have so much experience in the area of listening that if you can communicate as a group, so much useful tacit knowledge will surface and cross-pollinate each other. Each one would come out wiser. It would be a clear experiential demonstration of the value of sharing in a team learning context.

I am tempted to shortcut the process and simply lecture a la professor-in-a-classroom situation what I have found to be the obstacles to listening. However, that would destroy the opportunity to experience and thereby appreciate what is team learning and how useful it can be as a horizontal process of “group mining”. May I suggest that you spend some time brainstorming with your work team on the questions: “What obstructs listening?” “From my experiences, what works well when it comes to listening?”

91 — Simple tool for knowledge mining: ask “what works well?”

“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.” — Peter Senge

E8f

CREATING KNOWLEDGE F: Creating is Essential to Our Human Nature

We are all essentially creative, and as we grow older we tend to forget this gift for one reason or another.

Review and reflect on your life. Ask yourself the following question: “*What were the happiest and most fulfilling moments in my life?*” Make a list. Go ahead, take a break and resume reading later. This list is an important piece of information about you.

I have asked this question to hundreds of participants in our workshops. From our experience, 99% of answers fall into four categories. People are most fulfilled when they:

1. **Create** something new like write a poem, do gardening, reach the top of a mountain by bicycle, or build their own house;
2. **Re-create themselves or another** like pass the board exam, travel abroad, give scholarship to a relative or teach young kids;
3. **Procreate** which includes meeting their future spouse, attending to family needs, birth of a child and watching their child grow before their eyes; and
4. **Co-create with others** like winning a basketball tournament, singing in a chorus, joining a civic project or putting up together a Christmas tree.

Which of the four is your creative pathway?

Creative moments are characterized by full engagement of talents, being lost and absorbed in the work, fun and productivity. Mihaly Csikszentmihalyi, who spent two decades studying the creative process and what makes people happy, called such moments “flow...like being carried away by a current, everything moving smoothly without effort.”

People are happiest when they do something basic to their human and spiritual nature — when they create. We always see how joy and fulfillment follow naturally from creative acts.

Michael Ray of Stanford University, who developed the eminently successful course, “Creativity in Business,” says that creativity stems from our inner “Essence” and that one of its qualities is joy.

92 — Creating is essential to our
human nature

Mihaly said,

“Flow usually happens...when we are...working on a challenging job, riding the crest of a tremendous wave, or teaching our child the letters of the alphabet...experiences that focus our whole being in a harmonious rush of

energy, and lift us out of the anxieties and boredom that characterize so much of everyday life.”

“When you are completely caught up in something, you become oblivious to things around you, or to the passage of time. It is this absorption in what you are doing that frees your unconscious and releases your creative imagination,” said writer Rollo May.

Creativity is more visible in young children. When asked to list as many ways of getting a fruit from a guava tree, elementary school pupils were able to come up with more than 30 answers. Some delightfully unexpected and creative answers are:

“Just buy a fruit from the market.”

“Sleep and dream you are eating the fruit.”

“Forget the whole thing; you don’t like the fruit at all.”

“Cry so your father will get the fruit for you.”

Adults hardly come up with 20 answers. First, we adults value order and obeying rules. Creativity employs divergent thinking, but the school system cultivates convergent more than divergent thinking. We learn rules and rules in school that structure, rather than free, thinking.

“There ain’t no rules around here: we’re trying to accomplish something!” said inventor Thomas Edison.

Freedom provides the best environment wherein creativity can flower. When my two children Magiting and Diwa Leilani were growing up, we kept a “goodies drawer” full of crayons, water color, colored paper, ruler and compass, scissors, paste, number and alphabet rubber stamps and other art materials. They can draw or produce anything that fancies them. Over supper, we play fanciful free-flowing games like “you continue the story” as we take turns around the table. Magiting is now a computer design engineer in Silicon Valley and Diwa Leilani is an architect at the University of the Philippines.

Second, we challenge our assumptions less and less. Examine the children’s answers. They are unexpected because they refuse to abide by the assumptions behind the question. The art of a learning organization includes the fine art of being aware, making explicit for others to examine, and at times suspending, our assumptions and mental models.

Third, most incentive systems reward working harder, not working smarter. They count how many mice you catch, not whether you design a better mousetrap or a new trap for catching bigger rats.

Studies by Professors Halal of George Washington University and Ackoff of the University of Pennsylvania show that creativity and productivity in knowledge enterprises are unleashed when the market principle is applied within a corporation. Osborne and Gaebler in “Reinventing Government” say the same thing about applying the market principle in the public sector.

Fourth, we develop attitudes to new ideas. For example, we invest our ego and as we grow older we settle for the comfort in old ideas. Said John Cage, "I can't understand why people are frightened of new ideas. I'm frightened of old ones."

Joel Arthur Barker, in his book, "Paradigms: the Business of Discovering the Future," listed some statements that kill creativity:

"That's impossible!"

"We don't do things that way around here."

"It's against policy to do it that way."

"Let's get real, okay?"

"When you've been around a little longer, you'll understand."

"How dare you suggest that what we are doing is wrong?"

"I wish it were that easy." etc.

How many times did similar statements quench a creative ember in a child or in a young employee?

In his old age, Nobel laureate Albert Michelson was asked why he kept devising more and more precise ways of measuring the speed of light.

He answered, *"It was so much fun."*

E8g

CREATING KNOWLEDGE G: Social Inventions

Social inventions — such as new business models now being spawned by the e-commerce revolution — are the most strategic knowledge products of human creativity. They change the way people live in dramatic, long-term and large-scale fashion.

There are three basic ways of producing value: by using our brawn, by taking from nature, or by using our brain.

Technological and social progress has been largely due to the third: human knowledge and creativity. One way — a rather technocentric way — of tracking human progress is by noting the emergence of new social inventions. Arnold J. Toynbee in his last volume of “A Study of History” wrote that two basic processes underlie human progress: invention of new knowledge and tools (genesis) and *mimesis* or copying by other peoples or societies.

Social inventions are physical tools or processes, biological tools, organizations, conventions or symbols that are so useful that they rapidly spread within and across many societies.

“Social invention,” as first suggested by Stuart Conger, is more generic than “technology.”

Below are some examples that illustrate the significance of social inventions as units of social and historical change, listed from the proprietary and traded to the more public and freely shared (I added the last two categories on top of Conger’s):

- Physical tools (“hard” technologies): wheel, printing press, telephone, internal combustion engine, microprocessor, thermonuclear bomb and Apollo Lunar Excursion Module;
- Processes (“soft” technologies, including behavioral technologies): algebraic operations, assembly line, Kempner-Tregoe, Proffoff intensive journaling, Windows operating system and Internet business model;
- Organizations: factory, university, corporation or business enterprise, central bank, legislature, United Nations, kindergarten and knowledge networks;
- Conventions or protocols: UN Declaration on Human Rights, grammar, constitution, Robert’s Rules of Order and Ten Commandments;
- Symbols: money, phonetic alphabet, decimal number system, ASCII code, theater, flag, organizational chart and the Christian cross;
- Biological tools

93 — Broaden your mental model
of “technology”

(biotechnologies): antibiotics, hormone replacement therapy, vaccines, fermentation, cloning, genetically modified organisms and biological warfare.

Innovation in business models is an example of social invention. More about this important topic is covered in Chapters E-9 to E-9e.

Professor Michael Rappa of the North Carolina State University e-Commerce Learning Center came up with the following classification of emerging Internet-based business models:

- Brokerage Models bring B2B, B2C or C2C buyers and sellers together through: auction (e.g. eBay, AuctionNet), reverse auction (e.g. eWanted), virtual malls (e.g. Yahoo! Stores), catalog-type distributors for manufacturers (e.g. NECX), aggregating buyers to avail of wholesale prices (e.g. Volumebuy), adding fulfillment (e.g. eTrade) or quality assurance (e.g. Amazon.com zShop), vertical or specialized trading communities (e.g. VerticalNet);
- Advertising Models employ various means to increase traffic and get revenues from advertisers: portals based on search engine (e.g. Yahoo!) or content (e.g. AOL) whether general or personalized, websites that give freebies (e.g. Hotmail, FreeMerchant, Geocities) or goods at discounted prices (e.g. Buy.com); a variant is the Affiliate Model using click-throughs or banners in affiliate's website with revenue sharing arrangements;
- Infomediary Models which provide incentives for customers (e.g. free Internet access as NetZero, free access to content as NYTimes, freebies as eMachines) to give data about their buying habits (e.g. surfers must first register and fill a detailed form) and then sell the customer database to other firms;
- Merchant or E-tail models: the web front of traditional brick-and-mortar merchants (e.g. Barnes and Noble), or purely virtual merchant (e.g. Amazon, OnSale); a variant is the Manufacturer Model which is the web version of direct factory sales to consumers;
- Community Models are seen in sites that attract loyal users on the basis of common interests, participation, interaction or contribution of content; revenue comes from advertisements, voluntary contributions from users or subscription fee;
- Subscription Models feature high-value content and membership subscription fees; a variant is the Utility Models which feature per visit or per Kbyte payment.

The e-commerce revolution is triggering a creative frenzy for developing new business models and we do not yet see fully where all these creativity is taking world commerce.

E8h

CREATING KNOWLEDGE H: Fostering Innovation

What factors foster innovation in an organization?

Prof. Barton Kunstler of the Lesley University School of Management attempted to answer this question by observing and distilling lessons from history's most successful "creative hothouses" such as ancient Greece, Renaissance Florence, Elizabethan England and Parisian society (The Futurist, February 2001). According to Prof. Kunstler, among the societal traits common during those hothouse periods were:

- A cosmic sense of mission and a strong sense of social utility;
- Respect for thinkers and the fruit of thought, and a respect for mastery which defines quality standards for all;
- Critical thinking integrated with creative thinking;
- A drive to continually challenge and recreate fundamental assumptions, and recognition of multiple ways of knowing, teaching and perceiving as part of the creative process; and
- Openness to external currents in art, politics and society, and
- Exposure to "metasystems" or broader systems of thought and operations that stimulate powerful imaginative leaps in people previously bound to more narrowly defined systems.

At the organizational level, factors similar to the above seem to be in operation.

When I survey my nearly four decades of professional work under a total of 12 different superiors, the most important factor I see is the quality of leadership. The most innovative period in an organization I worked for was clearly influenced by a boss who:

- Encouraged, valued and rewarded generation of many options, fresh ways of looking at a problem, and new initiatives;
- Stretched his staff's thinking by always asking them questions that tend to pull them out of their "mental boxes" and to make them see "the forest and not just the trees";
- Was unafraid of "rebels" and tolerated eccentric ideas, provided they passed the tests of usefulness to, service for and acceptance by the consumers and other stakeholders, in short his style of management was not rule-driven but rather values-driven;
- Allowed his staff the time and freedom to explore and try out new things, while always driven by productivity criteria;
- Was very meticulous in quality control of written products and outright displeased with sloppy thinking and writing;
- Was a visionary with a clear sense of organizational purpose and mission that tends to "infect" the rest of the organization;
- Made extra efforts to make sense of economic trends, political events whether local or international, and implications of new technologies and discoveries;

- Encouraged learning and was liberal on scholarships and training leaves;
- Did not hesitate to outsource needed expertise, whether local or foreign.

The few years I worked under this executive were among the most hectic in my professional career — but they were the most rewarding in terms of my own productivity, innovation and work satisfaction. I was a middle-level manager then and I could see how his leadership qualities slowly filtered down the organizational culture.

I summarize the organizational culture then into just two: a drive for excellence and a freedom that enables innovation. Incentive was more “psychic income” than material rewards.

Innovation is novelty plus utility. Because innovation is useful to someone, it creates value. Therefore it makes sense to share the fruits of innovation with the innovator, in other words, it makes sense to institute rewards for innovation.

Some corporations reward innovation among its employees. At least one big Filipino corporate group I know used to have a prestigious Employee Innovation Award that was both material and honorific.

Republic Act 8439 (“Magna Carta for Scientists, Engineers and Researchers) mandates government organizations to award 40% of royalties to government innovator or inventor employees.

At the University of the Philippines, research and creative works are given points in the periodic evaluation system of faculty. However, many academic research and creative works would not fall within the WIPO (World Intellectual Property Organization) definition of innovation.

Many universities abroad had adopted royalty-sharing policies in favor of its faculty-inventors, awarding them 25% to 50% of royalties. Among the most generous to its faculty-inventors are the University of Pittsburgh, George Mason University, Indiana University, University of Texas System and Ball State University - which share 50% of royalties.

In the end, innovation boils down to personal attitude and orientation to change/learning. It is about our attitude to new things and new ideas.

“You can judge your age by the amount of pain you feel when you come in contact with a new idea.” — Novelist Pearl S. Buck

“I can’t understand why people are frightened of new ideas. I’m frightened of old ones.” — Musician John Cage

E8j

CREATING KNOWLEDGE J: Why Some Corporations Die

Learning disability is one of the reasons otherwise big and successful corporations die prematurely. Longer-lived companies are more tolerant of eccentricities, unconventional thinking and experimentation.

These are two of the findings of a longevity study by Royal Dutch Shell of Fortune 500 corporations (see “The Living Company: Habits for Survival in a Turbulent Business Environment” by Arie de Geus, Harvard Business School Press, 1997). Average lifetime of these corporations is 40-50 years: less than that of an average human being. Of those corporations in the Fortune 500 list in 1970, one-third was gone by 1983.

According to de Geus, who was director for planning of Royal Dutch Shell,

“...to cope with a changing world, any entity [corporation or individual] must develop the capability of shifting and changing, of developing new skills and attitudes: in short, the capability of learning. ...the essence of learning is the ability to manage change by changing yourself -- as much for people when they grow up as for companies when the live through turmoil.

“By outsiders, we [corporations] are judged and measured in economic terms: return on investment and capital assets. But within the company, our success depends on our skill with human beings: building and developing the consistent knowledge base of our enterprise.”

Continuous learning

Organizational learning starts with individual learning. The common notion of individual learning is attending a seminar, enrolling for another degree, taking an on-line course or reading a book. Another common notion is that learning and working are different and mutually exclusive activities. A third related notion is that of a typical human life cycle: you stop learning at some point in your life and then start working for the remainder of your life.

Those are very limiting concepts. They limit the range of your thinking and choices. They limit your growth as a professional and as a person.

Individual learning is converting every work (and life) experience into an opportunity for continuous learning. It is learning the habit of always asking, “What did I learn from that experience?” “What did I do right (or wrong) in that work activity?” “What keeps me from seeing, acknowledging and correcting my mistakes?”

In the workplace, it means not hesitating to ask more experienced colleagues before beginning an unfamiliar activity. It means constantly seeking better ways

of doing the same thing. It means constant trying new ways, seeking new options, improvisation and experimentation. In problem solving, it means often asking, “How else can we look at this problem?”

Organizations and their executives differ in their policies and attitudes towards innovation — and what usually goes with it: divergence of opinions, testing of new ideas, and tolerance of eccentric and unconventional thinking. The more learning oriented organizations not only tolerate but encourage or reward creativity: suggestion boxes, no-holds-barred meeting with CEO, employee innovation award program, etc.

At the individual level, it means taking personal responsibility for your own learning and for taking necessary consequent actions. It entails action questions like “How can I do better the next time around?”

Replace limiting beliefs

Contrast this with statements we hear often:

“I am too old to learn.”

“You cannot teach an old dog new tricks.”

“I am too busy at work I have no time for studies.”

“Education is expensive.”

Behind the last statement are other limiting beliefs: learning happens only in schools and universities, and therefore studying entails expenses and suspension of income (or time conflicts between work and part-time study).

In short, a common obstacle to continuous learning is our own beliefs.

Try a new belief: “Everything I do and everything that happens to me are opportunities for learning.” Applied to the workplace, this belief can be stated: “All work activities are opportunities for learning.”

93 — Re-examine your beliefs
about learning

At the organizational or team level, this principle is operationalized into standard procedures such as After-Action Reports, Lessons Learned Meetings, Retrospects, Post Mortems, etc. The US Army even have an office called Center for Army Lessons Learned (CALL) whose function is to collect and make available Army-wide learnings from After-Action Reports that are mandatory after all US Army operations.

Even mistakes are opportunities for learning. Mistakes are OK — if we learn from them. What is not OK is repeating mistakes.

We can learn from “best practice” as well as from “worst practice”. “Worst practices” or “bad practices” are equally grist to the mill of learning. We are most

eager to share “best practices” but who wants to share their worst or bad practices?

A common anti-learning tendency

A common obstacle to learning — and a human tendency — is to shy away from looking at and admitting one’s mistakes. In fact the tendency shows itself in the way many of us try to defend or rationalize away our mistakes. It happens all the time. For many of us defensiveness has become an automatic (read: unthinking) reaction (read: emotionally driven), a kind of behavior programming that kicks in when a person feels threatened by the consequences of his own mistakes.

A counterpart of this tendency is the way we try our best to avoid blaming or embarrassing others. For the sake of harmony and peace, truth (and learning) takes the back seat. Everyone does it to everyone. The whole thing can become part of an organization’s culture.

Defensiveness is anti-learning. It contributes to learning disability of the person concerned and the organization he belongs to.

People do not die of learning disabilities, but corporations do.

E9

KM Strategies 9: New Enterprise Paradigms

The knowledge economy is spawning countless new products and services, and creating new opportunities that often change the very nature of business and of enterprise itself. New business models and new business paradigms are testing who among the entrepreneurs now will excel, who will merely survive and who will fall by the side.

Years ago, after now Senator Edgardo J. Angara was appointed University of the Philippines President, among the first statements I heard from him was a funny but serious quip: *“There are three types of people: those who watch things happen, those who make things happen, and those who don’t know what is happening.”*

I belong to the first (that’s my job as an academic), and occasionally belong to the second (that was my job as a government functionary, and now back as a consultant and knowledge entrepreneur).

Which of the three types of people do you belong to?

Management guru Peter F. Drucker in his book, “Innovation and Entrepreneurship,” argued:

*“The major task in society – and especially the economy – (is) **doing something different rather than doing better what is already being done**...dynamic disequilibrium brought on by the innovating entrepreneur, rather than equilibrium and optimization, is the ‘norm’ of a healthy economy and the central reality for economic theory and economic practice.”*
[bold added]

Entrepreneurs make things happen in a way managers do not. Entrepreneurship is creating new production capacity to capture business opportunities while management is ensuring that a production system runs efficiently. Entrepreneurs see the horizon; managers look at the bottom line. Entrepreneurs lead between paradigms; managers lead within paradigms.

Although, in practice, both qualities are present to a greater or lesser extent in one person, it is important to distinguish between the two functions and capabilities.

For one, Drucker’s innovating entrepreneur is he who is geared up to excel in the knowledge economy. The innovating entrepreneur is he who can discern the new business paradigms and appreciate the new business models the new knowledge economy is bringing about. The mindset of an innovating entrepreneur is one which enables him to himself invent new business paradigms and new business models.

Reinventing enterprises and business organizations is not new.

In the early 1980's, when laptops and the Internet were still unknown, we launched a nationwide search for innovative and successful development and enterprise models. We found over a dozen, sought out their leaders, entrepreneurs or innovators, produced case studies with their cooperation and convinced them to travel and meet as a group in the University of the Philippines to share their trade secrets with each other and with us.

We called that meeting "The Doers Talk and the Talkers Listen" (the invited leaders were the "doers" while professors like me who like to talk all time were the "talkers" who were supposed to shut up and listen and learn from the "doers"). The proceedings were eventually published by the U. P. Asian Center in 1990 into book form that I edited.

To give you a flavor of what enterprise paradigms are all about, here is a sampling from the book:

1. The "**village corporation**" which Land Bank tried out in Camarines Sur is a joint venture between the bank and a group of farmers who received their Certificates of Land Transfer as part of the land reform program.

Land Bank takes a majority equity position and assigns a professional manager as CEO of the village corporation. He transfers agricultural, marketing and organizational technology and know-how, mentors promising future managers from among the farmers, and ensures that the corporation stays viable.

The plan is, over time, for Land Bank to gradually disinvest, using part of the farmers' earnings to pay off Land Bank's shares, developing a viable enterprise that can eventually be fully owned and managed by the farmers themselves.

2. Nurturing of a cooperative, the Embroidery Producers Association of General Mariano Alvarez or EPAGMA in Cavite, by a non-government organization, Tahanan Foundation, is a local example of **enterprise incubation**, a business start-up process that is very popular in the U.S. but largely unknown in the Philippines.

Tahanan Foundation helped organize housewives of former squatter families relocated by the government to the town of General Mariano Alvarez into a cooperative. Using an interest-free loan from PBSB (Philippine Business for Social Progress) and after training the embroiders and setting up marketing channels in Europe and the U.S., Tahanan Foundation eventually left a viable export-oriented cooperative run by the members themselves.

If you visit them, you can see the finely designed and world-class crafted products the ladies produce. The cooperative is also a showcase of self-governance.

3. Before Congress passed the Indigenous People's Rights Act, land tenure of ethnic communities was problematic.

The Ikalahans, an ethnic community in Sta. Fe, Nueva Vizcaya, after years of such conflicts succeeded in forging an agreement with the Bureau of Forest Development, assigning them sole rights to develop livelihood systems over more than 10,000 hectares of their ancestral lands and freezing of land titling in the area, in exchange for the responsibility to stop all logging and kaingin (swidden farming), and protecting the forest from fires and poachers.

To enter such agreement, the Ikalahans organized themselves into a foundation, the Kalahan Educational Foundation, led by tribal elders as their vehicle for forest management and development.

This innovation eventually triggered a new policy and program of **communal social forestry** by the Philippine government.

The above examples of enterprise innovations were taken from civil society. Chapters E9a to E9e examine enterprise innovations in the business sector.

E9a

ENTERPRISE INNOVATIONS A: Dotcom Lessons

More than product or process innovations, enterprise innovations and new business models determine excellence in the knowledge economy. In this regard, the failures of many U.S. “dotcoms” in 2000 offer valuable lessons of what works and what does not work.

First, some background.

At first, the coming of computers and automation merely increased operational efficiency. Information technology (IT) can do many processes faster, cheaper and more precisely – including the wrong processes. So, from operational support IT was next used as a managerial enabler to streamline or even re-engineer processes where managers ask *“are we doing things the right way?”*

The Internet and other information and communication technologies (ICTs) now create opportunities for doing completely new things. The question now is “what is the right thing to do?” Or, rephrasing the quote from Peter Drucker, “What different thing should we do?” ICT is driving the creation of totally new enterprise concepts and business models.

This was the hope and the hype in 1995-1999, when the NASDAQ climbed five-fold and hundreds of exuberant high-tech upstarts supported by get-rich-quick venture capitalists launched their new and not-so-new business models in the Net.

There were very good reasons behind the craze to get ahead in launching new business models, anticipating huge payoffs in capturing new opportunities in the New Economy.

What were those reasons? Well, thanks to the Internet and other ICTs:

- Location for some kinds of businesses is less a crucial factor, and as a result
- Markets are geographically expanding, and becoming global;
- Earning power is shifting from capital and machineries to knowledge embodied in people and teams;
- Transactions costs, particularly of information-intensive goods and services, are practically disappearing, and as a result
- Networks, alliances, value chain integrators, and aggregators/distributors among consumers and/or producers have increasing potential to create value;
- ICT-enabled just-in-time deliveries or point-of-sale manufacture is practically eliminating costly inventories;
- Driven by increasingly cheap, powerful and therefore ubiquitous microprocessors, technological convergence is erasing boundaries between traditionally separate and protected niches and sectors, and

Spawning multitudes of new products and services, with ever shorter product cycle times.

By the way, “business models” are often also understood to mean, besides enterprise-wide innovations, methods of transacting business. I prefer to use “enterprise innovations” to refer specifically to new forms or concepts of business enterprises. Amazon.com for example is an enterprise innovation, the most popular B2C (business-to-consumer) enterprise. In turn, Amazon.com uses several business models such as its patented 1-Click method of placing orders and its Associate Program of on-line customer referral (sweetened by a fee of 15% of the customer’s purchase). Business models, as methods or processes, are patentable under U.S. law. Some other examples of patented business models are:

- Reverse auction for buying discounted airfares, etc. (“Name your own price” by Priceline.com)
- Interactive on-line marketing platform (Doubleclick.net)
- Network sales system, including electronic shopping carts and secure real-time payment (Openmarket.com)
- Shortcuts to favorite websites (Netword.com)

Back to lessons learned from dotcom failures.

From the hindsight and diagnoses of nearly two dozen business writers and analysts, the most often cited lessons are the following:

- Customers did not take to online shopping as readily as the dotcoms expected. Most customers still prefer to drive to the nearest shopping center and squeeze tomatoes and smell the flowers before buying. Only 4-8% of retail sales in 2003 is projected to be on-line. Perhaps the fast tempo of Internet techies’ and high-tech entrepreneurs’ world somehow did not match the slower pace of adoption of new modes of commerce by the general public.
- Many dotcoms ignored good marketing practice; many started more technology-driven than customer-driven. Those who survived longer had to refocus or redefine their products midstream.
- “Freebies” are eventually unsustainable, compared with pay-as-you-go for services that deliver clear value to customers.
- New virtual companies cannot compete with brick-and-mortar firms with their established systems, procedures and external relationships which themselves venture into the Internet. Thus, a more viable model observed is the “Click and Brick” or partnership between (or takeover by) an established company and an Internet startup (e.g. Drugstore.com with Rite Aid, Amazon.com with Toys R Us). Another more viable model is using the Internet to support existing distribution channels supported by established major players (e.g. Covint)
- Venture capitalists were “pushing” money to dotcoms faster than they were ready to spend, and placing too great pressure for them to perform quickly and well towards that all-important IPO. Some venture capitalists were viewed as willing to lose a few ventures provided they make a good “killing” in one.

To place things in proper perspective, it seems that the dotcom crash was largely a U.S. phenomenon. A worldwide survey of 3,000 FDI (foreign direct investment) projects by PricewaterhouseCoopers in 2000-2001 revealed that, at the time dotcoms were crashing in the U.S. they were quadrupling in the Asia-Pacific and emerging regions. And the crash did not affect the growth worldwide, including in the U.S., of e-business software, Internet solutions and infrastructure, and telecoms infrastructure and software.

According to Forrester Research, worldwide B2B commerce will to continue to grow and exceed \$1 trillion by 2001, and B2C, to \$96 billion. Expect this to fuel continuing innovations in products, processes and enterprises.

94 — Better than product
innovation: enterprise innovation

E9b

ENTERPRISE INNOVATIONS B: The Employee-Owned Corporation

To attract, motivate and keep knowledge workers – the most important assets of 21st century corporations – innovations like stock options and employee stock ownership plans (ESOP) are becoming popular.

In fact, an enterprise innovation is re-emerging – the completely employee-owned knowledge enterprise.

Keeping knowledge workers is a problem. IT workers are very marketable, picky and mobile. In the Philippines, high turnover rates plague IT companies. Losing a software development manager can cripple a project and even hurt relationship with a client. Salaries are no longer sufficient motivators. Even stock options are so common in Silicon Valley, they are losing their power to keep good people. Loyalty has to be nurtured by other, more effective means.

This is where enterprise innovations can come in.

An Aborted Innovation

Here's an innovation episode that happened in 1980.

The political need to demonstrate the economic workability and social acceptability of an ideology superior to that of the local communist insurgents led then Col. Jose Almonte to propose to then President Ferdinand Marcos the PAIC mode (People's Agro-Industrial Corporation). The elements of the model were as follows:

- Establishment of an agro-industrial complex in about 10,000 hectares of reverted U.S. baselands in Tarlac, Central Luzon;
- Foreign and local investors bind themselves to completely divest the enterprise at book value in favor of the employees after the former have recovered their capital and realized a guaranteed level of ROI;
- Employees will be trained and mentored in all phases of technology, management and entrepreneurship to adequately prepare them to become responsible owners and managers;
- A system of earned credits form the basis for non-transferable ownership of each employee, which will be computed from their individual productivity and social/community services.

The Japanese firm, Nichimen-Ube, and later the German firm, Agrofaber, came in, together with some Filipino investors, willing to put in their capital under the terms of PAIC. The German economic minister visited Manila and relayed his government's support for the novel social experiment.

Col. Almonte obtained from then Defense Secretary Enrile approval for the lease of the land. Nichimen-Ube spent about \$1 million for the feasibility study which was approved by NEDA.

I promised to Joe Almonte I will resign from the University of the Philippines to serve as vice-president for Social Development of PAIC once President Marcos gives the needed final go signal.

Then the 1983 assassination of Ninoy Aquino completely changed the political landscape.

Employee Ownership

A decade later, I saw clearly the consequences of total employee ownership when I discovered OPASCOR (Oriental Ports and Allied Services Corporation) in Cebu City. OPASCOR demonstrated the following consequences:

- Peer pressure reduces tardiness, absenteeism and pilferage;
- No strikes (and no need for CBAs or collective bargaining agreements between management and workers!)
- The labor union becomes irrelevant (some labor leaders became managers!)
- Liberal non-salary benefits (via a sister multi-purpose cooperative); and
- Enhanced employee morale and loyalties.

I picked up an interesting book that tells the story of an unusual advertising agency (Andy Law's "Creative Company", John Wiley, 1998).

St. Luke's (a London ad agency) competitiveness crucially depends on their creativity and personal relationship with clients, which in turn depends on their employees.

Andy Law, also the CEO of St. Luke's, attributes these to the authentic dedication and organic interest of every employee which stems from the fact that they are equal co-owners of the company.

The experience of St. Luke's demonstrates the following consequences of this enterprise innovation on every employee:

- increased loyalty;
- increased productivity;
- increased responsibility;
- breeds high trust; and
- releases "a trapped spirit"

Lessons from St. Luke's

Andy Law admits that their enterprise model is too radical and borne out of unique circumstances that very few firms can or would emulate it.

Nevertheless, the St. Luke's model offers lessons that many corporations can profit from. I'll go by his quotes to preserve the flavor of the St. Luke's model:

"The company stands behind a vision: 'To open minds!'"

“If you can open minds, you can create fascination.”

“We see fascination as a specific and distinctive facet of our image and output that creates value for us and for our clients.”

“We need to meet client deadlines with fascinating product.”

“We need to keep exploring.”

“We are not afraid to experiment.”

“We have come to learn that 35 people is about as big as you can get before you cease to care about the people with whom you directly work. You will work late and passionately and collaboratively when you are small.”

“We self-regulate as much as possible.”

“We see cross-fertilization and re-invention as critical to remaining contemporary.”

“We need to be happy and true to ourselves and our personal value systems.”

“To keep exploring, we must remain inquisitive and each year we build in a process of self-examination.”

Well-motivated and productive people creating knowledge and value – that is a good concise summary of St. Luke's success formula as a knowledge enterprise.

95 — The creative company: a new style of thinking and doing

E9c

ENTERPRISE INNOVATIONS C: Benefits from Employee Ownership

Actual experiences and researches confirm the benefits from employee ownership and participation.

I picked up a book once at MPH bookstore across the national library in Stamford Road in Singapore, which is surprisingly relevant to what I was writing at that time for my “Knowledge and People” column for Business World Online. It is always uncanny how often and how precisely what we call “coincidental” events turn out to be interconnected.

Carol Beatty and Harvey Schachter’s “Employee Ownership: the New Source of Competitive Advantage” (John Wiley, 2002) is a compilation of 10 case studies of how Canadian companies became employee-owned. In Canada, a study by the Toronto Stock Exchange found that ESOP (employee share ownership plan) companies had a 95% higher profit and a 123% higher growth in profits over five years.

Beatty and Schachter found that employee ownership, when designed appropriately, can be a powerful mechanism for survival, profit and growth in a variety of industries and situations. Their study, which looked at the transition stage from non-ESOP to ESOP, uncovered several management insights.

About half of the companies were in crisis when the employee ownership option was considered. The study showed that employee ownership can help companies survive, but the likelihood of successful turnaround can be improved by a number of factors:

- Ensure that the new senior leaders of the company have expertise in the industry; experience with employee ownership is also a plus.
- Starting with upper management, make a commitment to employee ownership as a philosophy.
- Actual dollar investment from employees even if it is not large, and even if downsizing and wage and benefit concessions are also necessary.
- Work with the union and help union leaders look good to their membership.
- Well-designed and implemented turnaround strategy.
- Create and maintain good employee relations.
- Encourage employee involvement and participation greater than before employee ownership.

The other half of the companies studied were startups, spin-offs or privatizations which were not in crisis. After employee buyout, all companies generated better profits and returns for shareholders. For these companies, employee ownership helped retain valuable employees, enabled growth and expansion, and attracted investors. Some lessons can be gleaned from their experiences.

- Make a commitment to employee ownership as a philosophy, supplemented by greater employee involvement. One company adopted “four pillars”: employee ownership, profit-sharing, participatory management and open communications. Another company adopted the “unit presidency concept” whereby every employee acts as the president of his unit, acting in his best judgment of what is best for the company in any given situation.
- Senior leadership must be highly involved and on site.
- Employees should hold shares individually.
- For example, every employee is empowered to make purchases of supplies or inputs needed for their work; he uses a company credit card without approved purchase order or similar paperwork.
- Encourage employees to continue investing in the company’s stock
- Implement an exit strategy for internal shareholders (IPO, internal repurchase plan or sale of stock to a strategic partner)
- Keep the playing field as level as possible for new employees.
- Good employee and union (if any) relations.

In the United States, some of the large companies that are over 50% owned by employees are United Parcel Service or UPS with 344,000 employees, United Airlines with 95,000 employees, Florida-based Publix Supermarkets with 109,000 employees, information technology services company Dynacorp with 23,000 employees, and San Diego-based computer systems design company Science Applications with 41,000 employees.

Several studies in the U.S. confirm the benefits from ESOP.

A 1986 study by the National Center for Employee Ownership (NCEO) showed that ESOP companies had annual sales growth rates 3.4% higher and employment growth rates 3.8% higher in the post-ESOP period. Among them, those which adopted participatory management grew 8-11% faster. However, companies with participatory management but without ESOP did not significantly improve their performance.

A study of a sample of ESOP companies in New York and Washington states corroborated the NCEO findings, namely, that participatory management alone or ESOP alone had little or no impact on corporate performance but when ownership and participation are combined, sales grew by 6% per year more and employment by 10.9% per year more. A 1987 study by the U.S. General Accounting Office further corroborated the combined effect of ownership and participation: productivity growth rate increased 1.52 times.

A similar Rutgers University study in 2000 of 343 ESOP companies found that their post-ESOP performance exceeded pre-ESOP performance in sales growth (by 2.4% per year) and in sales per employee (by 2.3% per year).

A 1998 University of Washington study using a sample of 102 ESOP companies and 499 comparison companies showed that ESOP employees are better

compensated than their non-ESOP counterparts (5-12% higher hourly wage and average retirement benefits of \$32,213 versus \$12,735).

Take it from an employee of a successful ESOP company: *“It’s not just the shares. It’s the way of thinking. I’m extremely happy here. It has been 10 years – I can’t believe how lucky I have been.”*

E9d

ENTERPRISE INNOVATIONS D: Intrapreneurship

Most societies in the world today, except perhaps Cuba and North Korea, have transformed themselves from central planning to market economies. If the market economy is such a convincingly good thing, why can't market forces be allowed to operate within a business organization?

It took the Soviet Union seven decades to admit that central planning does not work, and under Mikhail Gorbachev in 1986 make the courageous decision to shift to the market economy (perestroika or restructuring). The Chinese made an earlier decision, starting after Deng Zhaoping was politically rehabilitated in 1979. Now, think about this: most corporations are still run like centrally-planned economies!

The same is true with most government agencies. Paradoxically, our government agencies are huge bureaucracies run via central planning within a Philippine economy that is essentially market-based. No wonder the ills that plague Soviet-style central planning are also the ills that plague government agencies: expensive, bloated, slow to change, bureaucrats' notion of priorities for resource allocation, poor response to clients, etc. In short, decision-making is remote from the market. Successful innovations shifting U.S. public agencies closer to market forces is the essence behind the book "Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector" by David Osborne and Ted A. Gaebler (Perseus Press, 1992).

Inspired by Osborne and Gaebler, when I was a government executive I initiated an interagency study committee in 1996 to suggest organizational and procedural innovations in the public sector. The committee included representatives from the COA, Department of Finance, DBM and NEDA. Some of the suggestions:

- Create a parallel foundation to sell services, receive grants and buy equipment for the parent agency,
- Allow agencies to sell high-demand variants of their products and services, e.g. vanity car plates, car plates ending in "888", higher fees for fast-track lanes (instead of "intrapreneurs" lining their personal pockets),
- Bid a public function (except those which cater to lower-income social groups) to the private sector,
- If commercially feasible, convert a line agency into a government-owned or government-controlled corporation,
- Institute employee innovation awards,
- Pay executives prevailing market rates in return for well-defined deliverables and time-bound commitments.

Well, the results of the study remained as that: results of a study. I guess the inertia of government culture, mind-set and established procedures (e.g. despite COA's "value for money" approach, government auditing philosophy remain

focused basically on inputs instead of outputs) was just too great for a puny study. A fiscal crisis, plus political will at the top, is needed to combat this inertia. In the U.S. it took a Vice President Al Gore to push entrepreneurial ideas within federal, state and local governments.

Most business corporations operate like governments. Services from their finance, training, personnel, data processing and other administrative units are not directly paid for by the units they serve. They receive funds budgeted by upper management, who “expropriated” the funds from all the earnings of operating units. Consequently, service units tend to please upper management more than to give the best services to their internal clients. Exactly like government bureaucracies!

“Intrapreneurship” as originally introduced in the late 1980s by authors like Pinchot, Hisrich and Lessem should be interpreted as not only an individual employee’s tactics within the organization but also as a business strategy, a considered move by upper management to alter the organization and rid it of bureaucratic ills.

Many enterprise innovations are being tried in the business sector to introduce market forces within corporations.

I will give only a sampler. These are “internal enterprise systems” taken from George Washington University management professor William E. Halal’s “The Infinte Resources: Creating and Leading the Knowledge Enterprise” (Jossey-Bass, 1998):

- A major U.S. oil company spun off its corporate computing department. It gets revenues from internal and external clients. Internal clients who are not satisfied are free to outsource. Result: internal demand was reduced to the more essential ones because internal clients started to have to pay for computer services, profits were generated also from sales of services to external clients, need for computer equipment was trimmed down, productivity and quality of services went up.
- An Ivy League university adopted a new policy converting each professor into a profit center. Promotion was hinged on number of courses taught and students serviced, and on number of billable research papers produced. Result: professors are induced to teach large freshman courses, competition for grants and research contracts increased, participation in collaborative research is more forthcoming, contractual research was no longer viewed as “academic prostitution”.
- Alcoa converted many of its service departments into profit centers that sell to internal (using computed internal transfer prices during the initial stages) and external clients. Sample result: the R&D department focused less on long-term projects and more on “hot projects” suggested by operating units, and obtained external R&D grants to augment its budget (on areas linked to strategic business priorities of the company).

- Lufthansa averted financial disaster in 1992 and became profitable by a corporate-wide reengineering and “mental change” (their term). They spun off several business entities (cargo, maintenance and data processing) and created separate accounting units (ground service, flight operations, marketing, operations and central corporate headquarters) that sell services to one another and to the outside.

My guess is that, unlike Cuba and North Korea, more and more companies will recognize and apply the merits of internal market systems.

96 — Convert corporations from
dictatorships to marketplaces

E9e

ENTERPRISE INNOVATIONS E: Network-Based Enterprises

Thanks to ICT (information and communication technologies) and the Internet, networks are proliferating all over the world. Ours is the Age of Networks. New forms of commercial enterprises and civic organizations are emerging that take advantage of this phenomenon.

The economic driving forces are easy to see. First, network costs are mostly upfront and transaction costs are decreasing, therefore the marginal cost of an additional network member goes down as network size increases. Second, the cost of market entry via the Internet is unbelievably small. Third, the marginal benefit to the network and to everyone in the network whenever a new member comes in, increases as the network size increases (Metcalf's Law). Therefore, once a network is set up there are inherent incentives, despite geographical distance, to keep on increasing the network.

Add the psychological driving forces. Commonalities of practice, interests, values and sense of identity, or pre-existing formal or informal communities provide the natural starting points for network formation and sustenance. Networks are expressions of peoples' desires to communicate, relate and socialize.

Technological development is of course the primary driver: lowering costs; increasing computing power, more broadband transmission and dramatically altering networking capabilities and architectures as in peer-to-peer computing. In business, networks underlie the following new business models:

"Cybermediation" is using the Internet for facilitating the matching of buyers and sellers, for selecting or bundling of goods and services to meet specific customer requirements, or for better integrating operations and transactions between supplier and producer. Various forms of Internet-mediated C2C, B2C and B2B auctions are emerging. Yahoo! lists more than 1,100 auction websites dealing with all sorts of goods and services: cars, antiques, computers, jewelry, real estate, etc. and employing various kinds of auctioning procedures.

Some B2B auction sites are: 58k.com for printers, AssetLine.com for construction equipment and industrial machinery, digibid.com for music, video and other entertainment equipments, ecFood.com for the industrial food sector, Farms.com for agricultural producers, and even for nuclear fuel through UraniumOnLine.com! Producers and their suppliers, and existing trading communities among brick-and-mortar companies are migrating their relationships to the Internet. GE procured \$1 billion worth of supplies in 1997 via its TPN or Trading Process Network. Covisint is a single global portal set up by GM, Ford and DaimlerChrysler to integrate their supply chains.

A number of Philippine firms have set up among themselves BayanTrade for similar purposes.

Knowledge networks create value for customers of commercial firms or members of non-profit organizations by matching knowledge users with knowledge providers, or by sharing and application of knowledge among a community of practitioners. Here are some examples:

- Collaborative Health Informatics Network (chic.com) is non-profit clearinghouse in Australia that connects IT vendors with potential clients in the health care industry: doctors, hospitals and clinics; assists new enterprises enter the health care and health IT industries; and supports information, research and networking requirements among these industries.
- Digital Workforce Alliance (cityskills.org) is a network of eight non-profit organizations in various U.S. cities which trains and places low-income adults in website design.
- Harmony (harmony-village.com) is a support system for SMEs and startups in manufacturing in Australia, assisted by 17 resource partner-firms and a “Circle of Experts” in Europe.
- Entovation International (entovation.com) is a Boston-based consulting network of thousands of KM practitioners in 61 countries offering a range of KM services especially in knowledge innovation and transfer, learning networks and enterprise transformation.

The Philippine government is beginning to see the value of knowledge networks. Congress had created a Knowledge Management Systems Division to organize and make conveniently accessible to users the wealth of knowledge it is constantly creating.

The National Economic and Development Authority had engaged the Philippine Sustainable Development Network, a non-profit ISP serving the information clearinghouse and knowledge networking needs of Philippine environmental and sustainable development NGOs, to design and prototype a multi-agency knowledgebase on sustainable development. Director Joey Virtucio of NEDA also wanted it to enable citizens and civil society groups to participate in on-line policy advocacy and discussions.

While Sun Microsystems’ slogan runs “*the network is the computer*”, e-commerce guru Peter Fingar argues that “*the network is the business*”.

Indeed.

96 — Network: the basis of many
new business models

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.

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;

- “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).

G1

HUMAN DEVELOPMENT 1: The Knowledge Worker

Nearly three decades ago, the primacy of knowledge workers was foreseen by American sociologist Daniel Bell (“Coming of Post-Industrial Society”, Basic Books, 1973).

Before personal computers and the Internet arrived, Bell correctly anticipated the growing importance of information and knowledge – and the people who produce, keep, apply and control them. He anticipated a coming global economy no longer dominated by the industrial (or secondary) sector but by the services (or tertiary) sector.

Bell built upon earlier works of Australian economist Colin Clark who, as early as six decades ago, discerned the pre-eminence of the services sector (“The Conditions of Economic Progress”, McMillan, 1940). After studying the patterns of economic growth of many countries before World War II, Clark concluded that

“...a high average level of real income per head is always associated with a high proportion of the working population in tertiary industries”
and that

“The most important concomitant of economic progress. . . [is] the movement of working population from agriculture to manufacture, and from manufacture to commerce and services.” (This is known among economists as the “Colin Clark Hypothesis”)

Two powerful forces that threatened energy and resources-hungry industrial systems made Bell’s thesis convincing: the 1967 and 1973 oil crises triggered by the Middle East conflict and the environmental movement in American campuses (late 1960s to early 1970s).

The reality of the post-industrial or knowledge economy began to sink in after the commercial introduction in 1974 of the microprocessor and the first personal computer, Altair, in 1975. It was also in 1975 when Bill Gates and Paul Allen licensed BASIC as the software language of Altair. It was also in this year when Telenet, the first commercial packet-switching network and civilian equivalent of ARPANET set up earlier in 1970 by the US Department of Defense.

As the incoming tide wave of the knowledge economy began to swell further, Alvin Toffler’s trilogy helped refine, label, popularize and capture peoples imagination about what is happening (“Future Shock”, Bodley Head, 1970; “The Third Wave”, Bantam/William Morrow, 1980; “Power Shift”, Bantam, 1990).

In Power Shift, Toffler underlined that a transfer of power is taking place to people who control the new source of wealth and power: KNOWLEDGE.

The “power shift” is not imaginary indeed. Here are some concrete indications:

- For the average corporation, (intangible) knowledge assets had surpassed (tangible) financial assets by a ratio of over 5:1. For knowledge-based corporations, the ratio goes up well above 10 (90:1 for Microsoft in 1996, 88:1 for Yahoo in 2000 and 194:1 for America Online in 2000). The reality is sinking in that the assets generating corporate earnings is knowledge in people's heads.
- Warfare more and more uses "smart" weaponry. The 1991 Gulf War is a harbinger of things to come.
- The knowledge content of products and services is increasing. For example, according to Thomas Stewart (Intellectual Capital, DoubleDay, 1997), more than half of the cost of gasoline consists of knowledge (from exploration, drilling, etc.); the typical aluminum beer can is 25% knowledge (from R&D); and about four of the five dollars used to produce a Levi Strauss jeans are used to buy information or knowledge. According to Stewart, production is "dematerializing".

Listen to what some well-known people are saying:

"The most important wars of the 21st century will be fought no longer on the physical battlefield, but in corporate boardrooms, laboratories, stock exchanges, classrooms, and shop floors." – former President Fidel V. Ramos

"Whereas at one time the decisive factor of production was the land, and later capital, today the decisive factor is increasingly man himself, that is, his knowledge." – Pope John Paul II

The primacy of the knowledge worker implies several basic shifts:

- Because knowledge embodied in people and knowledge embedded in work processes that they develop are becoming the new bases for creating wealth, then people have become more important. Psychologists, HR managers, anthropologists, OD and other applied behavioral experts are needed more and more. EQ is becoming more important than IQ.
- Continuing education, organizational learning, team learning, action learning, single and double-loop learnings, and many other forms of continuous learning in the workplace is becoming essential. A Royal Dutch Shell study of Fortune 500 firms revealed that many do not survive beyond 40-50 years because of "learning disabilities" ("The Living Company" by Arie de Geus, Harvard Business School Press, 1997).
- High-end knowledge workers possess marketable skills and therefore can afford to be picky and mobile. Keeping them, and motivating and nurturing them to be more productive and innovative requires horizontal, egalitarian and caring policies and organizational cultures.

- Tacit knowledge, the origin of all explicit or codified knowledge, is inherently with a person. Not all tacit knowledge can be recognized, fully expressed and documented – it remains tacit within the person, or sometimes with the work team that has developed its own “productive chemistry” over time. Knowledge managers therefore are compelled to recognize and value knowledge workers or teams who possess intangible assets precious to the company.

If Karl Marx had been born one-and-half century later and saw the emerging power of knowledge workers, instead of the toil and exploitation in sweatshops in England in the mid 1800s, I wonder if he would have written what he wrote.

14 — New power-holders in the
21st century: knowledge workers

G2

HUMAN DEVELOPMENT 2: Curious Reversals

The on-going shift to the knowledge economy is being accompanied by curious, and often pleasantly surprising, reversals in perspectives.

1. Ours is now a service economy

The industrial sector is much more dependent on capital than the service sector. A demonstration of this fact occurred after the assassination of Ninoy Aquino. In the aftermath, billions of dollars left the economy, peso value plummeted, Central Bank issued treasury bills at unheard-of rates to attract back the dollars, interest rates climbed above 40% and inflation followed suit.

The following year, our GDP from industry dropped very sharply while GDP from services dropped slightly. 1984 was the crossover year when our services GDP surpassed our industry GDP — and the gap has widened ever since.

The Philippines graduated to the services economy, not via the normal Colin Clark hypothesis but via the 1983-84 capital flight triggered by a political event. Since then, more of our employment and GDP have been provided by the services than by the industrial sector. Also, services have become an important element in our foreign exchange earnings from abroad.

The Department of Trade and Industry may have to shift priorities, and convey this by calling itself a Department of Trade, Industries and Services.

2. Knowledge assets appreciate with use

A professional who stops practicing “deteriorates”. The market value of an executive generally increases with longer experience. A professor-consultant learns more and gets better at what he does the more he teaches and consults. His consultancies improve his teaching, and vice versa.

Isn't this strange: while industrial assets depreciate with use, knowledge assets appreciate with use! For knowledge assets, maintenance need not be an expense!

3. Not just maximization of commodity output

In the knowledge economy, human development, learning and knowledge innovation have become the dominant drivers of economic growth.

What are the implications?

In the emerging knowledge economy, maximization of innovation and human productivity must be the development goal, more than solely maximization of commodity output, which is the mindset in the industrial economy.

Once economic planners grasp this paradigm shift, many things will be reversed. The human development cycle begins with the mother, afterwards includes the family and then when the child reaches the age of seven, continues with the formal school system.

93 — Maximize knowledge output, not just commodity output

Three other curious reversals of perspectives emerge.

4. Not all expenditure on services is consumption

The contribution of mothers is the most crucial service in the human development cycle, and yet it does not enter into our GNP calculations. It is an important form of investment but because it is not bought and sold in the market, and it is not recorded and accounted for, it is technically part of the “underground economy” or the “informal economy”!

The National Statistical Coordination Board, the government agency responsible for monitoring the economy and computing GNP statistics, had successfully developed a satellite accounting system to track natural or environmental capital. I am referring to the Environment and Natural Resources Accounting System. They are planning to develop another satellite accounting system — one more geared to the knowledge economy — for tracking human and intellectual capital.

94 — Track intellectual capital, not just physical/financial capital

I hope NSCB corrects this technical omission in human capital accounting. In fairness to mothers, teachers and tutors, economists and accountants must invent a new concept: investive service. Not all services are consumption!

95 — Services for building intellectual capital are investments

5. Households are producers, and firms are consumers?

From this new viewpoint, households and schools are actually not consumers; they are producers — of human resources and knowledge. The factories and corporations are not producers; they are consumers — of human resources and knowledge!

96a — In the knowledge economy households/schools are producers

According to Tom Stewart (“Intellectual Capital: the New Wealth of Organizations”, Doubleday, 1997), corporations do not own human capital; they rent them from their employees!

6. Governmental support to producers of human capital

If government policies and structures are to be reinvented toward this paradigm, we must acknowledge the key initial roles of the mother and the family in the knowledge economy. If we have a Department of Trade and Industry to assist industrialists and merchants, then we should equally have a Department of Child Development to give crucial assistance to families and child development centers (CDCs) for bringing up smart children for the knowledge economy. After the age of seven, responsibility can be passed on to the Department of Education.

96b — Families and CDCs deserve government support

7. Change mindsets first

These are indeed curious and strange reversals. They seem strange to one who views them from old mental boxes, but indeed they are necessary for survival and excellence in the knowledge economy.

But before policies, structures and procedures can be changed, our thinking must first change.

Listen to Gregory Bateson:

“The problems in the world stem from the difference between how we think and how the world works.”

G3

HUMAN DEVELOPMENT 3: Hi-Touch Management

Knowledge management (KM) is opening new “softer” perspectives in human and organizational development.

Firstly, KM is opening the eyes of managers and executives to “tacit knowledge” and its importance for competitiveness.

Tacit knowledge is what a master chef possesses that even she cannot verbalize. It can hardly be documented or manualized and yet it is as real as the customer satisfaction it brings about.

I know a superb craftsman of the English language. He happens to be a Filipino. His tacit knowledge is visible when he quickly and deftly transforms a very dry technical paragraph into a masterful piece that Presidents love to read before a rapt audience.

Tacit knowledge enables an experienced accountant to see meanings in a financial statement that a novice cannot readily see. It is what enables an experienced ecologist to guess correctly the problems in the underlying soil just by looking at the types and appearance of overlying vegetation. It is what enables a sharp workshop facilitator to sense emerging obstacles in a group process.

Ask them to write down what they do and they cannot do it. Can you describe in words how you ride a bicycle? And even if you can, will a novice know how to ride a bike after reading it?

The truth is, we know more than we can tell.

One implication is tacit knowledge cannot be transferred by listening to a lecture, reading a book, looking at a chart or watching a Powerpoint presentation. These methods of transferring explicit knowledge may give the listener a rough idea, but he will not be able to translate this into productive action. In KM lingo, there would be transfer of information but not of knowledge.

The other truth is, all explicit knowledge started off as tacit knowledge in someone’s head. This implies two important things. First, the creative moment or the “aha!” experience of an innovator or inventor is basically tacit (see for example, Ikujiro Nonaka’s “The Knowledge-Creating Company” in Harvard Business Review on Knowledge Management). Second, the corpus of tacit knowledge in an organization is far larger than what had been codified or documented (see for example, Joseph A. Horvath’s “Working with Tacit Knowledge” in the Knowledge Management Yearbook, 2000-2001.)

Much of the intellectual capital of a corporation leaves its premises every evening when employees go home! What happens to a restaurant when a master chef

resigns? Or to a salon when a French hire takes a long vacation? A batch of beer may taste awful because, when it was processed in the brewery, the brewmaster was sick and stayed at home!

You will begin to see why many KM practitioners claim – and I tend to agree – that “knowledge management” is a misnomer because one can manage only explicit knowledge: the knowledge captured in documents, databases, spreadsheets, flow charts, etc. A few even shy away from using the term “knowledge management”. Nonaka prefers the term “enabling knowledge creation”. Debra Amidon prefers “knowledge innovation”.

Therefore, the more important and challenging part of KM is how to deal effectively with tacit knowledge. And so, KM practitioners are rediscovering the value of traditional processes of knowledge transfer such as mentoring and apprenticeship. They adapt it to the modern workplace and call it by other names, such as “peer assist”, “buddy system” and “executive coaching.”

Nonaka describes how innovation teams in Japanese manufacturing companies apply a spiral process that involves transition from tacit to explicit knowledge at the personal level and then backwards at the team level.

Tacit knowledge is private knowledge. Once made explicit, it can be appropriated as public or company property. Thus, facilitating or motivating people to share tacit knowledge is a real challenge. Innovative European firms employ practices and policies that create an egalitarian and cross-disciplinary knowledge-sharing culture – which facilitates productive harvesting of tacit insights from innovation teams. Prof. Von Krogh of the University of St. Gallen, Switzerland describes how a “caring” environment produces such results.

Effective knowledge managers therefore become less and less like engineers or mechanics “fixing” systems and equipments, and more and more like ecologists or gardeners “nurturing” people and processes.

Secondly, KM is opening the eyes of managers and executives to informal and less visible forms of knowledge transfer that happen all the time, namely in “communities of practice”.

People do hoard knowledge. But they also share knowledge voluntarily and naturally – in communities of practice.

When peers or co-workers take a coffee break, stop to chat in the corridor or walk home after punching their cards at the bundy clock, they sometimes exchange tips, cue one another on latest technical gossips, share trade or professional secrets, or proudly recount recent technical discoveries like smart short-cuts. Such communities of practice abound in and out of the workplace. They are spontaneous, informal and self-organizing networks that cut across departmental or even company boundaries. They are driven by a human need to interact and connect with peers.

Informal leaders of such groups make good “knowledge brokers” – people who can tell you readily who knows what, or where you can find what knowledge. If encouraged but not structured, such informal groups facilitate sharing and transfer of knowledge. A way to encourage them is to allow them to create e-groups in company intranets. Another is to give them some time to meet, socialize and strengthen bonds.

KM managers have to learn becoming also high touch artists.

97 — KM: combination of hi-tech
and hi-touch

G4

HUMAN DEVELOPMENT 4: A Fresh Wind

The mindsets prevailing among international development agencies are changing. A fresh wind is blowing across the landscape of international development practice.

In a few days, the World Summit on Sustainable Development will start at Johannesburg, South Africa. It will review the gains ten years after the 1992 Rio Summit and trigger a new round of international commitments to sustainable development.

Simply put, sustainable development is development where economic growth is not at the expense of natural and human/social capital. It means development that is truly of, for and by the people. Sustainable development was a correction of, or learning from, numerous man-made development disasters.

The Philippines had its share of development disasters. The aborted Chico River dam project was the most infamous. Man-made disasters such as this led the World Bank to adopt its “safeguard policies” to prevent negative impacts on third parties, or to ensure that there are no losers in development.

Among UN agencies, the champion of sustainable development is the UN Development Programme. UNDP developed HDI or human development index, which is a composite measure reflecting average longevity, knowledge and standard of living in a country. UNDP is proposing at the Johannesburg Summit a major program, backed up by a substantial trust fund, called Capacity 2015. The central ideas behind Capacity 2015 are: building local capacities for sustainable development and globalization, poverty reduction and learning networks.

In parallel with the thematic knowledge networks of the World Bank, UNDP had set up geographically decentralized mechanisms for sharing of explicit and tacit knowledge: the Sub-regional Resource Facilities (SURFs).

An academic colleague, Prof. Alexander (or “Sandy”) Flor used to head the Knowledge Management Program at SEARCA, Los Baños. According to Sandy, SEARCA started its KM program in 1999 following the example of the World Bank, which adopted in 1996 its new policy and image as a “knowledge bank” and launched its \$55 million KM initiative.

Like the World Bank, the KM Program of SEARCA (SEAMEO Regional Center for Graduate Study and Research in Agriculture) is oriented to facilitating creation, sharing and application of development tools and approaches, with focus on agriculture and rural development.

Sandy gave me a copy of his book, “eDevelopment and Knowledge Management: ICT Applications for Sustainable Development” (SEARCA, 2001). The prevailing theme of the book is the use of ICT (information and communication technologies) in poverty alleviation, agricultural development and governance.

Similar development-oriented knowledge-sharing networks had been started in several places:

- ENRAP: Electronic Networking for Rural Asia/Pacific (enrap.org)
- Global Development Network (gdnet.org)
- World Bank’s Global Knowledge Partnership which links more than 15,000 nodes across government and non-government organizations (globalknowledge.org)
- Philippine Sustainable Development Network (psdn.org.ph)
- Philippine City Network (cdsea.org)

During the planning of UNDP’s Capacity 2015, two UNDP officers from the Bangkok SURF came to Manila and initially identified the Philippines and Nepal as the first two pilot Asian countries. An approach they recommended for Capacity 2015 piloting in the Philippines was to support SMEs.

Capacity building for setting up and managing community-owned livelihood systems is not new in UNDP. For example, the UNDP GEF (Global Environmental Facility) Small Grants Programme simultaneously addresses two issues: transboundary environmental impacts and local or community livelihood. The thinking basically is that human development consists of acquiring capabilities that enable participation at three sequential levels, in increasing order of importance:

1. Employment — benefits FOR the people
2. Management — control BY the people
3. Ownership — enterprises OF the people.

Provision of technical training and employment opportunities is only the first step. Fullest development occurs when people own and control productive capacity, together with the individual skills and attitudes (human capital), and the community organization (social capital) needed to get themselves there.

A study of best development practices (“Innovative Development Processes in the Philippines”, Asian Center, University of the Philippines, 1990), which we conducted in the mid-1980s, revealed the following commonalities among successful and innovative development initiatives:

- Cohesiveness or unity among the participants (“we” feeling)
- Sense of ownership (“our” project)
- Commitment, starting with the leader or a core group.

You sense these factors when you talk with officers of a successful cooperative, or with a rural leader, or a local champion. You hear remarks like “*sa amin ito*” (This is ours.) “*kami ang nag-pangalan nito*” (We gave its name.) You can sense the inner drive, confidence and pride among the people and their leaders for whom

development is not a concept or paradigm but rewarding personal and group experience.

Surprisingly, capital, technology, organization and access to markets are not the most important success factors. Yes, increases in personal incomes are there to see. But there is much more than readily meets the eye. The critical ingredients are less visible: the intrapersonal empowerment that accompanies equally invisible changes in human and social capital.

The templates that experts use for human development have been evolving. Perhaps we are now beginning to see that successful templates have structural (explicit) and personal (tacit) components.

98 — Development of human and social capital: the “softer” sides

G5

HUMAN DEVELOPMENT 5: Good Training, Bad Training

Is training always consumption expenditure? When is it investment expenditure? What is good and what is bad training?

In times of budget deficit, among the first items the Philippine government trims off is allocation for training. This was brought home to me one time when a government official phoned me some bad news: the four-day training in knowledge management is cancelled. Reason: their budget is slashed and all training activities are disallowed.

The business community is not much different. Most corporations view their HRD departments as cost centers. Training is viewed as manpower and time removed from production. Some corporations set ceilings in training days per year per employee.

We see other cases of confusing investment expenditure with consumption expenditure.

When you prefer cheaper electric bulbs over more expensive fluorescent lamps, you fail to see the consequences of your decision on your future stream of expenses. When you see a gas-guzzling smoke belcher running in the streets, you see the consequence of postponing a tune-up or replacing a faulty spark plug. The tune-up can make the difference between going 10 kilometers per liter versus only 6 kilometers per liter.

Using gasoline at 6 kilometers per liter when a tune-up can bring it up to 10 kilometers per liter is like chopping a tree with a dull axe.

Listen to Abraham Lincoln: *"If I had eight hours to cut down a tree, I'd spend six sharpening my axe."*

Many Filipino families seem to know better than using a dull axe. Filipinos place high value on education. I know many low-income *padre-de-familias* who sacrifice other consumptions to save money for their children to finish college degrees. Rightly, they view a college degree as the most important investment they can provide their children. Why? They sense, rightly again, that a college degree likely leads to higher future incomes.

Confusing consumption and investment may be forgivable or humanly understandable under extreme poverty or deprivation. For example, we hear about starving people in Africa who are forced to eat seed grains they had set aside for the next planting season.

I don't think the Philippine government or most business corporations belong to that category.

Taking the cue from Filipino families, may I propose a guideline: training should be regarded as investment whenever it is likely to increase the value and volume of performance or output. From Chapter D13, we saw that this likelihood is greater if the context of the training (read: knowledge acquisition) is as close as possible to the context of the work (read: knowledge application). And of course, an investment is a good one if it is handsomely exceeded by the present value of the future stream of income increments attributable solely to the investment.

The guideline sounds pretty much like increasing production capacity, which we normally associate with adding machineries, equipment and other capital goods, doesn't it? In fact, training can increase capital – human capital! Knowledge in an employee is no less a form of capital, both for him and the company. Good training is therefore a win-win investment for him and the company!

And so, this guideline can help us distinguish between very essential, less essential and non-essential training.

99 — Right training = increase in production capacity

Or, between good training and bad training.

“An employee should work on whatever he is best at. Why train him in his area of weakness? If you do, you succeed only in moving him from ‘weak’ to ‘acceptable’. What good does that do?” Noel Baviera, VP for HRD of Standard Chartered Bank, was driving home a point over lunch.

“However, if he does whatever his interests and skills are, he will be more productive and fulfilled. It’s a matter of matching.” he continued.

By way of supporting him I countered, *“At the Center, we help a client’s employee draft his Life Mission Statement and then see how it overlaps with his work responsibilities and with his organization’s goals.”*

I continued, *“Where the overlap is nil, training is useless and he would be happier and more productive if he works elsewhere.”*

Across the lunch table, Susan Alcala, VP for HRD of PCI Bank, nodded her head in agreement.

So, incompetence results from a mismatch between capability and function, or between the person and the work. It is less about the person himself.

A blind man will be incompetent as a security guard, but may be superb as a piano tuner. The nasty jobless brawler in a street corner ten years ago and the brave decorated Marine from the war zone may be the same person. A competent town mayor may become an incompetent president. A prostitute may become a celebrated Mata Hari in time of war.

So, whenever matching a job to a person is feasible and effective, training or attempting to change the person is fruitless.

Many times graduate students come to me, seeking research problems on which to devote their thesis or dissertation. I always turn the question back to them:

“What do you most love to do?”

“Where do you see yourself 20 years from now?”

“What are your passions or what angers you most about Philippine society?”

“What work gives you greatest fulfillment?”

The same questions may be asked of those who seek to know what kind of work best fits them, and what kind of training can help them become like well-sharpened axes for that kind of work.

G6

HUMAN DEVELOPMENT 6: Extraordinary Learning by Ordinary People

Values formation, many will agree, is important but difficult.

We are familiar with the manifestations of anti-learning and unproductive values: hoarding knowledge, inability and unwillingness to work in a team, taking criticism of work output as a personal insult, always dead sure and never admitting mistakes, distrust of radical or unconventional ideas, lack of readiness to take personal responsibility for learning, tendency to lecture coupled with inability to listen, etc.

We also know these values do limit organizational learning and performance.

But the difficult questions are the “how” questions. How do you develop these values among the people now in your organization?

There are many values formation programs – *Salamin ng Paglilingkod* (Mirror of Service) by the Career Executive Service Board, the Values Orientation Workshop of the Civil Service Commission, and the Pamathalaan of the Moral Recovery Program – but I have not come across studies of their effectiveness.

A 1997 University of the Philippines study evaluated the Values Education (VE) Program for secondary schools of the Department of Education, Culture and Sports (DECS). It gave tests to students in some Metro Manila high schools. The findings were depressing: slight gains (about +5%) were observed from the first year to the second year, but no significant gains from the second year to the third and fourth years. All gains were gone by the first year of college (the VE Program does not continue on to the college level). By the third and fifth years of college, there were significant losses (about –22% and –10%) compared with first year high school levels.

The lackluster performance I suspect is related to the limitations of classroom methods. Reading some of the VE textbooks, one gets the impression that most of the time they are teaching ABOUT values, instead of teaching values – they have not gotten far from teaching of concepts. Clearly, we need new perspectives and tools in VE.

Are values better “caught than taught”? We are not sure, because if they are “caught” from parents, how come children from the same family do not all have identical values?

“Teaching” and “training” are transitive verbs: they are about someone (an expert or a superior) doing it to someone else (a student or subordinate). Maybe this conception is part of the problem in “values education”, “values orientation” and “values formation”. In workplaces that are increasingly egalitarian, where

workers are increasingly knowledgeable and self-responsible, dishing out values to people may have become ineffective.

In “Dance of Change” (Doubleday, 1999), Peter Senge and his colleagues distinguished “training” and “teaching” from “learning”.

According to Senge,

“The word ‘training’ originally meant ‘directing the course of a plant’: to be trained is to be controlled.”

“But the word ‘learning’ derives from the Indo-European *leis*, a noun meaning ‘track’ or ‘furrow.’ To ‘learn’ means to enhance capacity through experience gained by following a track or discipline. Learning always occurs over time and in ‘real life’ contexts, not in classrooms or training sessions. ...it generates knowledge that lasts: enhanced capacity for effective action in settings that matter to the learner.” How then are values learned in real life, whether at work, at home or at play?

Learning happens in real life contexts only when the person concerned reviews and reflects on his actions and experiences, in what Donald Schon calls “reflection in action” (*The Reflective Practitioner: How Professionals Think in Action*, Basic Books, 1984). Then all activities in the workplace are transformed into opportunities for learning, or what some knowledge managers call “action learning”.

In real life, there are dramatic changes in values that we occasionally observe in people. These events we call by different names: “conversion”, “letting go”, “setting oneself free of a mental box”, “paradigm shift” or “life-changing experience”.

The experience may be triggered by a serious life-threatening illness or accident, foreign travel, religious or political awakening, meeting or loss of a significant other, narrow escape from death, professional or relationship crisis, or a significant misfortune in one’s livelihood.

The person comes through the process a different person.

However, this learning process is unintended and unplanned. In our workshops, we facilitate a recall and review process to maximize retrospective learning. When done in a group context, the synergy across learnings further enhances the richness of insights and lessons among the participants.

We begin by a trigger question: *“What life experience had changed you the most?”*

When we ask this question in our workshops, participants most likely have their stories to tell. Such stories often evoke strong emotions or feelings from the storyteller. When an ordinary person tells his extraordinary story, he is sharing a treasured part of himself. The sharing can become a powerful learning situation about real life personal change that is superior to a classroom lecture.

May I share one of my learnings: “reflection in action” any day equally yields benefits as retrospective learning from life crises.

G7

HUMAN DEVELOPMENT 7: Are You a Knowledge Leader?

If you are an executive, ask yourself these questions: Do you know how to send/receive e-mails? Have you posted a contribution/reaction in a discussion group in your company portal? Do you know what is an e-group? A search engine? Have you composed a letter yourself using MS Word or any other popular word processors? Do you have a computer (or laptop, or terminal) within an arm's length of where you usually sit?

If you gave many "no" answers, your lack of experience and therefore intimate appreciation of basic IT skills may be a stumbling block in your organization's journey towards a knowledge organization, and to competitiveness in the knowledge economy.

If you lead a department or division, ask yourself these questions: Do you view training and seminars as worth taking valuable time of your people away from production or operations? Do you require an evaluation report after a project or important activity is over? Are you open to suggestions that sound unconventional, unusual or eccentric? Do you change your mind about something after listening to a colleague or subordinate offer a better idea? Do you often ask your people, "*What is a better way of doing this?*" Are you often in the lookout for new ideas, new technologies, and new viewpoints?

If you gave many "no" or "not often" answers, your orientation or style of leadership may be a stumbling block to learning in your group. It is so easy to point your finger at other people and at external factors. It is more difficult to point your finger at yourself.

You have to rethink your attitudes and habits, see which ones are not working for you and your group, and change them. Otherwise, when competitive pressures build up, your superiors may deem it easier to replace you than wait for you to change your attitudes and habits that block learning and growth of the organization.

It is much faster to get people with the right attitudes than change unproductive attitudes in people. "*I hire for attitudes, and I train for skills*" I overheard an executive say.

Leadership attitudes and styles for knowledge processes appear associated with personality traits that hardly change over time. Consequently, knowledge managers would rather look for people who are "natural" for certain roles in knowledge processes, and give them formal responsibilities matching their personality traits.

David Skyrme, who in my view is one of the very innovative and experienced KM practitioners in the world, had defined several KM roles and I will quote him

liberally below. I encourage you to regularly consult his website at www.skyrme.com.

“The expert – you have expertise in a domain of knowledge or a particular skill. You enjoy honing your knowledge and exercising your core skills. You are the recognized ‘expert’ and stay with your chosen knowledge domain over many years.

“Knowledge analyst – you love assimilating knowledge from many sources. You have many of the attributes of the expert and also of the packager. Others respect your views and like your ‘rational’ knowledge to support their arguments.

“Knowledge leader – you have a broad area of knowledge and build bridges between knowledge (and people) in different domains. You are a generalist, not a specialist. You see the big picture and how knowledge supports organizational objective.

“Knowledge networker[/broker/connector] - You connect people to people and people to knowledge. A hybrid of expertise and leadership – your scope is not too broad and you have a large address book. You don’t know all the answers yourself, but you know a person who does.

“Knowledge custodian – you like everything to be in its proper place. You love classifying knowledge and organizing content into taxonomies. You get upset if knowledge renegades upset the system. You’re probably the knowledge center manager.

“Knowledge creator – you are an ideas person. Always thinking of new things to do, you never seem to have time to see them through to implementation. Your thinking goes off in several directions but you do come up with breakthrough ideas and innovative approaches.

“Knowledge entrepreneur – you may not have the best ideas yourself, but you do recognize those that have potential. You are the bridge between the creator and the packager. You have a good story to tell and are committed to making a difference.

“Knowledge packager – if you didn’t do knowledge work you would probably be an engineer or mechanic. You assemble all the knowledge components to make something worthwhile. You help knowledge creators realize their dreams.

“Knowledge visualizer – you like pictures, so you get away from those boring bulleted Powerpoint slide shows. You make your points in images, diagrams and perhaps even cartoons and music.

“Knowledge activist – you are committed to a cause and will marshal the knowledge you need to support your case. You can also be a knowledge maverick, questioning the status quo and raising doubts in others about the efficacy of their hard-won knowledge...

“Knowledge seeker – ever curious, you are always asking ‘why’ and seeking new knowledge. Even after you retire, you will go on knowledge delivery cruises to new exotic locations. The pursuit of knowledge for your personal fulfillment is your key driver...

“Storyteller – you... encapsulate knowledge into highly memorable stories. You have a strong imagination and look for analogies and metaphors...”
Which one fits you best? Then that is your natural role in a knowledge organization.”

H1

SCHOOLS OF THE FUTURE 1: What Futurists See

Our grandchildren will learn very differently from the way we do. They will have different outlooks towards learning and its place in life and work.

In a briefing on e-learning before a group of university administrators, my colleague and friend Col. Fermin Javier observed that hospitals today are more advanced technologically than hospitals of our grandparents. But he said we cannot make the same observations of universities. Somehow, universities in the Philippines are clinging to methods and traditions more tenaciously than do our hospitals.

Tidal waves of change are here. The emerging knowledge-based global economy is compelling schools to change or be obsolete.

Let me share with you some trends in education that futurists discern. There are two major schools of thought in futures research, the US-based World Future Society and the Europe-based World Futures Studies Federation. As a professional member of the first, I bring an American bias. I will attempt to paint a futuristic canvas using broad strokes.

Technological Changes

Seven of the trends are clearly spurred by the ICT (information and communication technologies) revolution:

- Trend 1: e-Learning
- Trend 2: Customization and decentralization
- Trend 3: Reinvention of teaching
- Trend 4: Collaborative school networks
- Trend 5: Primacy of intellectual and social capital
- Trend 6: Knowledge creation over information acquisition
- Trend 7: Merging of learning with working

Five thousand companies in the US offering e-learning technology, services or content had revenues of \$2 billion, which is projected at \$11 billion by 2003. By 2002, 85% of four-year colleges will support distance learning programs.

By enabling anytime anywhere anyhow learning, ICT is shifting learning away from the classroom. "With e-learning, you can study in your pajamas," quipped Fermin. Learning is becoming more flexible, self-paced, ungraded and learner-controlled. The factory-style herding of individuals through the identical standard curricular programs is fading away. That individuals have different learning styles and preferences is being recognized. Customized instruction will benefit both gifted and slow or disabled learners.

The teaching profession has to reinvent itself or disappear, according to a Newsweek article about professions threatened by the ICT revolution. The new breed of teachers can still be classroom mentors but they will also have to be courseware developers, on-line tutors, educational software advisors, web course administrators, evaluator-accreditors, or Internet researchers.

Many schools are discovering mutual benefits in collaboration and networking: sharing of on-line courses, pooling multimedia and library facilities, exchange of best practices, etc. Schools consortia are linked together in cooperation with cable TV companies. Classes use the Internet to link with laboratories and scientific institutions to avail of expertise, experimental data and library facilities.

In the world of work and production, value-creation will be increasingly by creation, transfer and use/reuse of knowledge. This will place additional importance and demands on the educational system and on how learning takes place in the workplace. Expect better recognition of the value of knowledge in people, and in networks and other social arrangements that facilitate its creation and application. The rapid growth of corporate universities and the transformation of corporations into learning organizations are attempts to link learning and working more intimately together.

Social Changes

Social forces are at work that will change the shape and workings of schools in the future. Here are other major anticipations of futures researchers:

Trend 8: Demographic shifts: adult and continuing education

Trend 9: Life-long non-formal learning

Trend 10: Inequalities: social and geographic

Trend 11: Civic values, intra/interpersonal and emotional skills

Trend 12: Learning organizations

As age structures in developed countries shift to older age groups, demand for adult and continuing education has increased. As retiree populations increase, many will be recruited to work or volunteer as tutors or resource persons. The glut of information and knowledge, the fast pace of changes and increasingly competitive business environments will require constant learning and adaptation, continuing improvement and sometimes career changes. These changes are so rapid the formal school system cannot respond quickly or anticipate accurately, creating opportunities for a wide variety of non-formal short-term learning schemes.

As the ICT revolution sweeps over societies, existing inequalities across groups are magnified. However, access to information or education is an equalizer and enabler, helping disadvantaged groups to know and to vigilantly protect their rights and to discover new opportunities. Government policies will determine how the ICT revolution will affect existing social inequalities from country to country.

A multiethnic and multireligious world that is rapidly shrinking brings out sharply the need for awareness of ethical and relational issues, and for skills/aptitudes for communication, conflict management and civic/community action. Through multimedia infrastructures spawned by the ICT revolution, students and educators alike are confronted daily with global issues of poverty and injustice, terrorism, illicit drugs, corruption, pollution and war. Educational reform and innovation are reshaping schools as educators rediscover that success in life and in work depends more on emotional than intellectual skills. How to live life will be taught as much as how to make a living.

Survival of corporations depends on, among others, the ability to adapt and learn when environments change drastically. Competitiveness in the knowledge economy depends on constant improvements, improvisations and innovations that should permeate the entire organization. In a learning organization, every action in the workplace is an opportunity for learning.

Many traditional paradigms about education are changing. To our grandchildren, learning will be essential to work and to life itself.

H2

SCHOOLS OF THE FUTURE 2: Social Intent

Analysis of intentions is an excellent tool for social forecasting. Other tools like trend extrapolation, technology envelopes, Delphi polling, signed digraphs and simulation modeling do not work as well from my experience, unless one is predicting the behavior of a physical or biological system. But socio-technical systems such as schools are more complex and less predictable.

For years, I dabbled in social forecasting. In the 1970s, then Executive Secretary Alejandro Melchor and Col. Jose T. Almonte set up the first academic-based political think tank in the Philippines, the Philippine Center for Advanced Studies. I was deputy dean of the Institute for Strategic Studies of PCAS under Joe Almonte. I had many opportunities to test the latest social forecasting gizmos. A second great opportunity for me, less academic and more real, came the 1990s. I was again with Joe Almonte as his Assistant Director-General for Policy and Plans at the National Security Council under then President Fidel V. Ramos. There, accurate reading of intentions and capabilities was crucial. Data came from a variety of sources: official policy documents, extemporaneous speeches of a prime minister, informal chats with his close adviser, national budget priorities, deployments of military assets, etc.

I will use selected policy documents as indicators of social intents in education, to get some sense of what lies ahead for schools in the future, focusing on the civilizational pioneers, the United States and the United Nations.

The U.S. Congress adopted goals for education, called the “Goals 2000: Educate America Act”. They revealed the perceptions of the American government and educational policy elites as to where they are and where they want to go. In brief, the desirable future of education in the U.S. is where:

1. Every adult is literate and has knowledge/skills needed to compete globally and exercise citizenship.
2. Every school offers a disciplined environment conducive to learning, i.e. free from drugs, violence, firearms and alcohol.
3. Every school promotes partnership with and participation of parents to promote academic, social and emotional growth of children.
4. Forward-looking teacher education and retraining programs are accessible to all teachers.
5. Several concrete outcomes are realized by the turn of the century, such as 90% completing high school, first in the world in science and mathematics achievement, universal readiness of Grade 1 entrants, and specific subject-matter competencies required at various primary and secondary levels.

Comparative achievements in science and mathematics by schoolchildren worldwide have always been topped by East Asian countries like Singapore,

Taiwan, South Korea, Hongkong and Japan (Third International Mathematics and Science Study, 1999).

Through the National Information Infrastructure (NII) initiative, the American government had adopted the goal of wiring and connecting all the nation's schools and classrooms, as well as libraries, research institutions, and a host of other social services to the "Information Superhighway".

Surveys by the U.S. Department of Education revealed disparities across schools' access to the Internet and ICT (information and communication technologies). In the fall of 1996, 65% of U.S. public schools had Internet access and 20% of teachers use ICT. But percentages were smaller for lower grades, smaller schools, rural areas and schools in poor neighborhoods. Most countries, rich or poor, aim for greater connectivity and equity of access to the Internet for their schools.

The United Nations University identified fifteen rather broad planetary goals to guide schools and educational systems in the 21st century ("1998 State of the Future: Issues and Opportunities"). These provide insights into broad directions playing in the minds of international civil servants. Besides stress in ICT, non-technical goals caught my attention:

- Achieving sustainable development
- Transforming authoritarian regimes to democracies
- Encouraging diversity and shared ethical values
- World peace and security
- Encouraging economic development through ethical market economies
- More equity for women and other disadvantaged groups
- Promoting inquiry into new and sometimes counter-intuitive ideas

In the late 1990s in the Philippines, the Literacy Coordinating Council (LCC) of the Department of Education, Culture and Sports conducted consultations among Philippine educational policy elites to redefine functional literacy for the Filipino in the 21st century. LCC's expanded definition is a forward-looking and wholistic conception of the ideal Filipino, applicable to formal and non-formal educational domains:

1. Communication skills, or ability to: read, comprehend and respond to ideas presented; access, process and utilize basic and multi-media information; listen; write and clearly express one's ideas and feelings; and clearly express one's ideas and feelings orally and nonverbally
2. Problem solving and critical thinking: numeracy skills, ability to make critical and informed decisions, scientific thinking, open to change, aware of options, innovativeness and creativity, and future orientation
3. Sustainable use of resources/productivity: ability to earn a living, sustainable use of resources (including time) and appropriate technology, entrepreneurship and productivity
4. Development of self and a sense of community: knowledge of one's history, pride in one's culture and respect for those of others; recognition and practice of civil and political rights; self-development:

self-awareness, self-discipline, sense of responsibility, self-worth, self-realization, may paninindigan [principled], pagbabagong-loob [inner change]; pakikipagkapwa, pakikilahok, pakikiisa/kapatiran [cooperation/brotherhood]; and a sense of personal and national identity: makatao [people-oriented], makabayan [nationalistic], makakalikasan [pro-environment], maka-Diyos [God-centered].

5. Expanding one's world vision: global awareness, interdependence and solidarity, knowledge, acceptance, respect and appreciation of diversity, nonviolent resolution of conflicts and peace.

The LCC reformulation reflects a broad consensus among Filipino educational experts about the goals of schooling for Filipinos in this century.

H3

SCHOOLS OF THE FUTURE 3: Life Skills

Schools today are designed to teach people how to make a living. More and more, the schools of tomorrow will also teach people how to live life.

The expanded definition of functional literacy adopted in 1996 by the Literacy Coordinating Council is a good hint of the shape of schooling to come. Sure, the 3 R's are still there. But take note that many skills are what we can call "life skills": ability to listen, ability to clearly express one's feelings, self-awareness, self-discipline, sense of responsibility, self-worth, self-realization, capability for personal transformation (pagbabagong-loob), global awareness, respect and appreciation of diversity and others' cultures.

Last November 2001 I gave a talk on knowledge management before the PICPA (Philippine Institute of Certified Public Accountants) annual convention in Expo Filipino, Angeles City in Pampanga (a province in Central Luzon). The Technical Session Director, Ms. Emerita S. Diaz of PNB Comptrollership asked, "*If people are the most important assets in the knowledge economy, then couldn't they also be the most serious liabilities?*"

"I agree completely", I seconded immediately.

An accountant may be a CPA board topnotcher, but what happens if he couldn't relate well with co-employees? or keeps misreading cues from his boss? or couldn't control his temper?

EQ vs. IQ

"I hire for attitude, and train for skills", I overheard a manager say. I couldn't agree more. Research findings bear out this wizened manager. Daniel Goleman, in his 1995 book on "Emotional Intelligence: Why It Can Matter More than IQ" cited the following researches:

- The careers and lives of 95 Harvard students were followed to middle age. Findings: success (measured by salary, productivity and status), life satisfaction, and happiness with friendships, family and romantic relationships were not correlated with their college grades.
- The careers and lives of 450 boys from a slum area near Harvard were followed to middle age. Findings: IQ was generally correlated with socioeconomic status, but emotional skills (such as ability to handle frustrations, control emotions and relate to other people) were even more highly correlated.
- Valedictorians from Illinois high schools in 1981 were up and studied. Findings: By their late twenties, the group's performance was only average; only one-fourth were performing at par with successful young people their age, and many of the rest were doing much less well.

Overheard from someone speaking wisely from experience, “*High IQ can get you a job, but high EQ will get you promoted.*”

Technical vs. Non-Technical Training

When I was Vice-Chairman of the Career Executive Service Board, I was often a speaker or resource person before crowds of government executives. CESB is the government agency in charge of testing and training of government executives from the level of director to undersecretary.

I keep citing the results of surveys which show that Filipinos value the following qualities of leaders (in descending order of importance):

- caring, good human relations (*kagandahang-loob, makatao*)
- highly principled, moral integrity (*maka-Diyos*)
- strong determination, courage, political will (*lakas ng loob*)
- fairness and justice (*pantay-pantay ang tingin sa lahat*)
- technical competence, intelligence (*maruning, magaling*)

“Intelligence” ranks only 5th in what Filipinos value! They want caring leaders, not smart ones. Yet, most executive training in government, and I guess also in the private sector, are mainly technical in nature. Are we barking at the wrong tree?

Among the premises underlying the Philippines 2000 reforms during the administration of former President Fidel V. Ramos is the fact that many of our economic ills have non-economic root causes that are social, cultural and even moral in nature (If you wish to receive the one-page diagnostic causal flow diagram that accompanied many Philippines 2000 documents, you may email me). We must re-examine any assumption that most social problems are basically technical problems requiring technical solutions. I remember a quote from Albert Einstein: “A problem cannot be solved using the same mindset that created it.” We must bark at the right tree.

Cultural Overhaul

At the level of organizations, this means that attitudinal and cultural factors must be recognized and addressed. Or else, as Ms. Emerita S. Diaz warned, a knowledge asset can flip into a knowledge liability.

Carla O’Dell and C. Jackson Grayson, Jr., in their book “If Only We Knew What We Know: the Transfer of Internal Knowledge and Best Practice” (1998), suggested a six-point knowledge manager’s “cultural overhaul” to-do list. By the way, I recommend this book after Thomas A. Stewart’s “Intellectual Capital: the New Wealth of Organizations”.

Their to-do list:

- Believe people want to share.

- Prepare to lead by doing.
- Rely on the twin forces of capitalism and democracy. “As a nation, we swear by them... we live by them. We even fight for them. As companies, we rarely do.” said O’Dell and Grayson. Quoting William E. Halal who advocates for internal enterprise and market systems in corporations, “The biggest problem in most organizations is that they are centrally planned economies.”
- Develop collaborative relationships.
- Instill personal responsibility for knowledge creation and sharing.
- Create a collective sense of purpose.

Strangely, to me these are important life skills $\frac{3}{4}$ no more, no less $\frac{3}{4}$ those life skills essential for groups of people working together to create and apply knowledge within the context of democracy and free market.

And so we make a pleasant discovery: in knowledge management, the skills for earning a living are the same as the skills for living life fully.

H4

SCHOOLS OF THE FUTURE 4: Closing the Learning-Working Gap

In the future, learning will increasingly be more responsive, relevant and proximate to the workplace.

Several forces are responsible: fast pace of technological change and obsolescence, stiffer and wider competition in a globalizing market, lags in response time and institutional rigidities in formal school systems, and growing value of knowledge assets across all types of production.

A businessman and entrepreneur friend who owns a leather belt factory, Mr. Vic Hao Chin told me some years back, “My MBA education did not help me any in my most important business decisions.”

According to University of Southern California Marshall School of Business Professor Morgan W. McCall, Jr. 73 percent of surveyed MBA program graduates in the U.S. said that their MBA skills were used “only marginally or not at all” in their first managerial assignments.

Stanford University Professors Jeffrey Pfeffer and Robert I. Sutton noted that despite 1,700 business books published yearly (1996 data), \$60 billion spent on training, an estimated \$43 billion spent on management consultants, and 80,000 MBAs doing business studies, the changes in actual management practice is, correspondingly, disappointingly little (The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action, Harvard Business School Press, 2000). After four years of studying this “knowing-doing gap”, they concluded:

“...one of the most important insights from our research is that knowledge that is actually implemented is much more likely to be acquired from learning by doing than from learning by reading, listening, or even thinking.”

This is tantamount to a challenge of our cherished paradigms of learning and schooling. Something must be done.

Schools will have to be more agile, diverse and responsive. Workers will have to be more flexible or less career-bound, continuously learning and re-trainable. New intermediary services for more efficiently matching buyers and sellers in manpower markets will have to be developed.

Indeed, many things are being done.

The macro trend towards closing the learning-working gap is clearly discernible from a number of widely different micro trends such as:

- Partnering between schools and corporations
- Rapid growth of corporate universities

- E-learning programs over corporate intranets
- Action learning and team learning programs in corporations
- Knowledge transfer programs: transfer of best practices, mentoring and buddy systems, peer assist programs, lessons-learned databases
- Installation of CLOs (chief learning officer) or CKOs (chief knowledge officers)
- Emergence of the executive coaching industry
- Internet-mediated distance education programs for working students by traditional campus-bound schools and universities
- Work-oriented curricular reforms in secondary and tertiary levels
- Growth and diversity of training and e-learning enterprises.

The pressure to close the learning-working gap will also demand new attitudes, capacities and career strategies on the individual knowledge worker: readiness to adapt to changes, willingness to learn new skills and technologies, taking proactive and personal responsibility over his own career path, flexibility to adapt or even change careers, aptitude for improvisation and work improvement, seeking to broaden knowledge rather than remain in a narrow specialization, and capacity for self-study.

Pursuing an additional academic degree is not always the best strategy to close the learning-working gap. Every time I show the following table to my graduate students, I seem to sense from their faces and reactions a nagging, doubting feeling of “Am I doing the right thing having enrolled in an academic degree program?” or “What am I doing here?”

Learning Tools by Immediacy and Closeness (place/relevance) to Application

Immediacy of Use	Outside the Work Setting	Within the Work Setting
Remote from use	classroom lecture, professional journals, academic degree programs	classroom-type training in corporate universities and training programs
Proximate(before or after use)	case studies, industry benchmarks and best practices, published manuals	work templates, project reviews, after-action reviews, retrospects, post-mortems, lessons learned meetings, process

		documentation
Immediate(during use)	experiential workshops, management games, computerized simulations, role playing	on-the-job training, apprenticeship, experiential learning, Learning-in-Action

The table rubs in the point – to the chagrin of a graduate student – that an academic degree program (uppermost and leftmost cell) is the most remote way of learning among those learning tools used outside the work setting. The table also opens an appreciation of the superiority of “learning-in-action” tools (lowest and rightmost cell) – precisely the message driven by Professor Pfeffer and Sutton’s findings.

The crux of the matter is that knowledge acquisition and knowledge application should occur in as much the same context as possible.

H5

SCHOOLS OF THE FUTURE 5: Learning Organizations

In the future, more and more organizations, including schools and universities, will become truly learning organizations.

Organizations will have to transform themselves into crucibles for learning. They will generally become more "school-like."

Wait, aren't schools and universities already learning organizations?

Not always. By definition, schools and universities are teaching organizations, but not necessarily learning organizations.

Paraphrasing Peter Senge (who introduced the term "learning organizations" a little over a decade ago), William Isaacs, Chris Argyris and David Garvin, among others, the following conditions are present in a learning organization:

- Learning (or review/evaluation/reflection, experimentation and improvisation/improvement) is embedded in every work process.
- Work teams engage in productive dialogue (e.g. team learning), which consists of systematic communication modes and tools for combining individual knowledge to create group knowledge.
- Dialogue requires that each member of the organization is willing and capable of productive inquiry, which includes examining personal assumptions and motives, making his reasonings and inferences explicit or public, seeing interrelationships among parts and wholes, and reflecting on personal issues and barriers to learning and action.
- Managing or facilitating all phases of the knowledge cycle is part of the organization's policy, culture and operating procedures.

In comparison, these are what usually go on in schools and universities:

- Learning is focused more on external subject-matter oriented research, but little on work processes internal to the school.
- Transfer of knowledge continue to follow the same Fordist "assembly line" processing (fixed curricula and standards, mass production with little respect for individuality) which schools and universities followed several generations ago.
- Feedback is poorly ingrained: some faculty members resist or resent evaluation of their teaching effectiveness, curricula lags behind market needs by years, many teachers remain computer-illiterate, etc.
- Cross-fertilization of ideas is hampered by disciplinary boundaries and college/departmental turfs. Real-world problems are viewed in largely disciplinary "slices".

Over dinner one night, retired Dean Ajit Singh Rye of the Asian Center, University of the Philippines (UP) at Diliman, who has been with the UP community since the 1950s, remarked "*There is academic tribalism in UP. Even*

within some departments, factions do not talk to each other." Knowledge is mostly individually-owned and created: solitary monodisciplinary researches predominate over group and multidisciplinary researches, incentive systems are based on individual performance, the concept of authorship is predominantly personal rather than institutional, etc. Not enough attention is placed on the last and most important stage of the knowledge cycle, namely, the utilization or application stage.

Consequently, I maintain that schools and universities are contributing to, rather than solving, the learning-working or knowing-doing gap referred to in the previous chapter.

Many schools do teach well and many of their students do learn well, but by the above definition, many schools and universities are -- as organizations -- poor learning organizations.

There is so much knowledge embodied in the faculty of schools and universities. The opportunities and potentials to tap this knowledge, combine them across disciplines and bring them to bear on real-world problems, are great.

Two kinds of gap need to be crossed: the gap between specialists and their disciplines (cross-disciplinary collaboration gap), and the gap between knowledge creation and knowledge application (market gap). Universities, to prosper and excel as centers of knowledge, need to further close these gaps.

Prof. Rye was central in conceptualizing and planning for then UP President Edgardo J. Angara an applied research unit to close those gaps. The result was the successful UP Center for Integrative and Development Studies (CIDS). Its support came mainly from external grants, engagements and projects thereby placing it under some market discipline. To get it away from turf wars, CIDS was placed directly under the UP President.

Disciplinary "mental fences" are difficult to break down. Professors can be vicious fighting their kind of turf wars.

The Asian Center, where I have belonged since 1975, is like a sore thumb in UP. Because our academic philosophy and program framework is area studies, our faculty had developed amongst themselves a transdisciplinary outlook. We harbor a healthy disdain of disciplinary boundaries. We invented courses that refuse to be boxed into traditional academic categories.

For example, every year I teach a course on "Innovative Processes in the Philippines." It is neither psychology, engineering, sociology, cultural anthropology, technology management, economic development or business management. It is all of them.

A faculty colleague once accused us, *"You don't have a discipline to go home to."* I retorted, *"Reality is a chopsuey; it is not carrots alone, cabbages alone, cauliflowerer*

alone, etc." (Note: *chopsuey* is a Chinese-Filipino dish composed of a mix of vegetables.)

We stick out like a sore thumb because area studies will always step into someone's hallowed academic turf. For example, we had instituted in 1975 a degree program on Philippine Studies. After several years, two colleges followed with their own similarly-named programs. There had been interminable issues and tensions between the Asian Center and other (disciplinary) colleges and departments ever since.

In my view, UP is a typical university, patterned as it was from American models starting nearly a century ago in 1908. I feel that modern-day universities had to pass two tests to survive and excel in the 21st century: how its entire faculty can most productively collaborate among themselves, and how its programs can be most responsive to the needs of the business, governmental and civil communities that it serves outside.

Schools are changing, but ever so slowly. For schools that hardly change at all, they will be left behind by those who are faster learners.

H6

SCHOOLS OF THE FUTURE 6: An e-University Dream

ICT (information and communication technologies) is pushing schools and universities to evolve towards e-universities.

Imagine. It is Year 2020.

You are working in a managerial position in an East Asian corporation. You enrolled for a masteral degree program in Knowledge Management (KM) in an e-university, which is a consortium of several ASEAN, American and European universities. You had a major hand in selecting the thrust and courses especially of the second half of the program, where you chose to gear them towards two certifications, one as Facilitator of Team Learning and another as Intranet Manager. You and your boss, the VP for HRD in your company, figured that these are the most useful and anticipatory of your career requirements in the company.

Your job takes you to Hongkong, Tokyo, Singapore and California many times a year, often unpredictably. No problem. Your self-paced, study-anywhere lessons are accessible from anywhere in the world via your mobile phone-cum-PDA (personal digital assistant). And for specific questions, your assigned faculty mentor based in Singapore is only an email or a phone-call away. If she cannot help you, the e-university had prior arrangements with several KM experts worldwide that act as virtual resource persons, available for consultation anytime. Enrolling in the course requires only a few face-to-face meetings with e-university officials. At the start of the masteral program, in one of your trips to Quezon City, Philippines, you had met an accredited faculty interviewer, submitted some required documents, signed some agreement and authentication paperwork, had your biometrics taken (photo, thumb and voice prints), took a short learning-style test, and received your student password. Then, part of the program you chose for yourself is a two-week practicum on team learning at a cooperating university in Boston.

A week after being accepted, a computer program $\frac{3}{4}$ part of the Learning Management System (LMS) of the e-university $\frac{3}{4}$ matched you with a faculty mentor based on your profile. She happens to be a full-time HRD manager accredited as part-time faculty to the National University of Singapore. She is a very supportive coach, able teacher, and nurturing guide always sensing your needs and pacing (she can access your progress statistics via the LMS), and willing to help. She has become a friend.

You enjoy the web-based e-courses thoroughly. You know they were written by teams drawn from the e-university consortium, which has a total of over ten thousand faculty members to choose from. The teams normally consist of subject-matter specialists, multi-media experts and courseware specialists. That explains to you why they are so readable and entertaining.

In addition, well-known authorities personally wrote, reviewed or oversaw production of some courses. You know you are getting the best instruction that no single campus-bound university can ever deliver.

Years ago, you had considered enrolling in a traditional campus-bound management department in a university in Metro Manila. You were sure the degree will give you additional credentials but you had your doubts about how much knowledge you will learn applicable to your work and suited to your learning style. Anyway, the time constraints (and the interminable Manila traffic between your office and the classroom) were the primary reason you kept postponing enrolling. Until the e-university came.

A couple of courses, according to the program brochure, were courses developed by two e-learning companies that are world-class specialists in those topics.

Some courses encourage discussion groups among other students either through designated chat rooms (synchronous) or e-groups (asynchronous). The e-groups are assisted by AI-interpretation software that enables seamless text-based conversation in KM terminology across several languages. Since you are busy and cannot predict your availability from work, you prefer the e-groups. Besides, although the chats offer optional video conferencing mode and you have broadband connection, you choose to join the chats only when well-known professors and management gurus are on-line.

The discussion groups are something else, you discover. Because most of your co-students work in similar jobs, you find yourselves emailing one another for mutual assistance and knowledge sharing. In one trip to Johannesburg, South Africa you had the pleasant and fruitful experience of meeting one of them face-to-face. You have, unintentionally or without planning, formed a virtual “community of practitioners” who have come to find mutual benefit in always keeping in touch for specific questions and issues related to your jobs $\frac{3}{4}$ and not to your degree program. The best part of the course, and here your boss agrees, is a terminal practicum you must undertake within the context of your own workplace. With assistance from your faculty mentor in communication with your boss, a topic had been identified quite early in your program. The topic is relevant to your current work, and it brings together everything you are learning from the masteral program.

In fact you had had much time thinking and preparing for it. You find yourself consulting your boss every now and then about it, not only because e-university rules say that your boss (or the company executive in charge of the area of your practicum) will grade you for it, but also because you really want to produce a terminal paper that is useful for the company. You are happy because you anticipate that your boss will also be satisfied.

You were glad you did not take the traditional campus-bound degree program. You are having the best kind of education the 21st century.

The dream is the promise of e-universities.

H7

SCHOOLS OF THE FUTURE 7: Alternative Schools

A bewildering variety of alternative schools is sprouting. To our grandchildren, learning will be associated with the following qualities: broad choices, relevant, ubiquitous, continuous, non-formal and flexible.

Here is a sampling from the Philippines:

- Center for Teaching and Learning Styles: applying the theory of multiple intelligence, and its cultural arm the
- Tanghalang Henyo: a theater to showcase the multiple intelligence of students;
- Dalubhasaan para sa Edukasyon sa Sining at Kulture and the Philippine High School for the Arts and their counterpart in science, the Philippine Science High School;
- U.P. Creative Writing Center;
- Popular Education for People Empowerment or PEPE;
- Escuela sa Museo operated by Ayala Foundation as part of Ayala Museum;
- Education for Life Foundation started by my activist friend and ex-priest Edicio de la Torre;
- Center for Health and Creative Arts or CHACRA: which gives a variety of personal development workshops and lectures;
- Co-Train which became Co-Multiversity led by Dinky Soliman now DSWD Secretary;
- Children's Laboratory for Drama in Education;
- Mamamathala: which gives lectures and workshops in indigenous Filipino culture and spirituality;
- Rubio Training Institute: especializing on emotional intelligence for Filipino school children;
- St. Francis Cabrini School: non-graded, self-paced learning
- Pamanang Salinlahi Foundation School: no examinations and grades, peer teaching, self-paced;
- Pampamilyang Paaralang Agricultura: patterned after Escuelas Familiares Agrarias in Europe;
- Tuklas or Tulong Kaalaman Center of Petron for helping low-income families start micro-enterprises;
- Dualtech Training Center: combines learning in the classroom and in the shopfloor;
- Bahay Tuklasan of Susi Foundation: a school for farmers in sustainable agriculture; and
- Paaralang Anak-Pawis of IIRR: farmers determine curricula, community provides scholarship for fellow farmers.

In ICT and e-learning, local schools and training agencies are mostly imported varieties: Wizard Academy of Mass Education Ventures Corp., CyberState.U, VirtualUniversity.edu, Hewlett-Packard Philippines' E-Learning-on-Tap, CCLFI.Philippines

EduQuest a joint venture by Asia-Pacific College and SM Equicom Computers, Computer-Aided Learning and Authoring Environment for Tele-Education or CALAT, Cisco Networking Academy (attached to the Laguna State Polytechnic College), PurpleTrain.com of Informatics Computer Institute, Kids 2 Watch, Yapster e-Learning, etc.

Bewildering indeed. My list is growing all the time as I discover new and innovative alternative schools that cater to specialized niches or that deliver instruction in a specialized manner.

What is happening?

My guess is a combination of favorable factors in this country: open society, free market, search for wider job opportunities, high value placed on education in Filipino culture, cosmopolitan orientation, etc. These ingredients are not unique to the Philippines. We find them in many other places on the planet.

Take large measures of an open society and a larger measure of a free market. Add the pressure of global competition. Spice it up liberally with information and communication technologies. Add a dash of cosmopolitanism or pluralism. Finally add the key ingredients to the stew: knowledge and people. What dish do you get? Learning. Or what some knowledge managers call knowledge acquisition and creation

Nowhere in this planet are these ingredients as abundant as in California and generally the American West Coast. Here you find Silicon Valley. And Hights-Ashbury. And Esalen Institute. And Rand Corporation.

Learning and creativity flower whenever social and personal feedback loops operate freely. The environments of freedom, openness, egalitarianism and free enterprise favor learning. That is why technological innovation, productivity and social change are most rapid in democratic societies.

British historian Arnold Toynbee noticed a curious 6,000 year trend: the geographic center of planetary innovation and change keeps moving westward: Mohenjo-Daro/Harappa (present Pakistan) then Tigris-Euphrates (present Iraq), then Egypt and Phoenicia (present Lebanon), then Athens (Greece), then Rome, then Spain and Portugal, then British Isles, and then (crossing the Atlantic) and United States. Long before the hype about the East Asian growth miracle, he predicted that the center of civilization for the next half-millennium would be the Western Pacific — a westward jump from the U.S.

In fact the centers of economic and demographic gravity of the U.S. have been shifting westward throughout its two hundred year history. No wonder California and the West Coast harbor the most bewildering variety of technological and cultural innovations.

But that brings us to our part of the planet: East Asia

The seeming consensus, despite the 1997-1998 hiccup called the East Asian financial crisis, is that East Asia remains the long-term bet for trade, technology and growth. The World Bank predicts that China will surpass the U.S. in GNP by 2020. The September 11 event may bring that about even sooner. Japan should not be counted out. Nearby India is also learning deregulation, and living with an Islamic neighbor Pakistan. South Korea has learned valuable lessons thanks to the financial crisis. And ASEAN is a half-billion market being steadily freed from political shackles over the last two decades. Australia is a vast land with vast resources.

East Asia for three decades had shown above-average growth rates exceed those of Europe and North America, except for (temporarily) resource-rich countries in the Middle East like Saudi Arabia.

So, watch for the coming East Asian centuries. And use educational and technological innovations as harbingers. They are coming.

H8

SCHOOLS OF THE FUTURE 8: Customized Learning

As we discover more about the human mind and the nature of the learning process, learning becomes more and more customizable. And as ICT (information and communication technologies) pervades all production and marketing processes, products and services become more and more customizable. The result: a trend towards customizable learning systems.

Academic programs still follow the assembly line model of mass production. Students have few choices: “elective” subjects and which class section (and teacher) to enroll in. Student are made to go through practically the same academic wringer to become graduates like they were identical automobiles from a factory, or identical doughnuts from an automated bakery, or identical books from a printing press.

Then each graduate (read: product) goes through the same pass-or-fail national or board examinations (read: quality tests). The outcomes of these make-or-break tests are practically “life sentences”. In some countries like Japan, some cannot take failure or social pressure and commit suicide.

Looking back to today, I can easily imagine our great grandchildren pitying us their great grandparents.

Starting 1907, educational reformist Maria Montessori developed a teaching method which believes that children are unique individuals with their own unique genius including their inherent manners and paces of growth. Like a gardener, instead of a factory assembler, her method allows a guava seed of a child to become like a splendid guava tree of a man, or a patola seed of a child to become a gentle patola vine of a woman. The Montessori method does not force all seeds to become apple trees growing at the same rate and to the same size. For almost a century, the Montessori method had gained many adherents and practitioners worldwide, evidence that it works, and works well.

A contemporary of Maria Montessori, Henry Ford introduced in 1908 an incredibly inexpensive method — the assembly line method and the use of replaceable parts — of producing a motorized vehicle for practically every man on the street, the Model T Ford. From then on, Americans and the rest of the world fell in love with the automobile.

It seems the mental model of a factor assembly line has been simply too compelling on the Western mindset. The production process is mechanical, centralized, rigid, predictable — and very cheap. The Fordist mental model insinuated itself in many phases of life, including education and agriculture (mechanized monocrop farming had overtaken gardening). Educational models like the Montessori approach were relegated to the non-mainstream. We are the products of this mainstream Fordist educational model, whether we like it or not.

Don't we have any choice at all? I believe more choices are looming over the educational horizon. Several developments make me optimistic.

Left-brain and right-brain thinking. In 1981 Dr. Roger Sperry won the Nobel Prize by showing that the left and right sides of our brain "thinks" differently. The left side is systematic, objective, linear and abstract. The right side is free-flowing, creative, sensory and subjective. We each have our "favorite side". Sperry's findings echo a proposal in the 1950s by psychologist Guilford that creativity entails a different kind of thinking ("divergent thinking") from reasoning ("convergent thinking").

Four-quadrants whole brain model. Combining Sperry's findings with Paul Maclean's "triune brain model", physicist, singer, sculptor and HRD manager Ned Herrmann proposed a "whole brain model". Maclean showed that the human brain has three parts: a lower, primitive brain stem for our survival functions, a middle layer, the limbic system, involved in emotions, and on top of both is the most recent evolutionary addition, the neocortex that we use for cerebral or intelligent thinking.

Herrmann showed that there are basically four learning styles, depending on which side (left or right) and which stage (upper or lower) of the brain is most active in a person. Left cerebral people (the theorists) learn best via facts and precise definitions. Left limbic people (the organizers) learn best via detailed step-by-step instructions. Right cerebral people (the innovators) learn best in an atmosphere that is free-flowing and prefers visual, or graphic presentations over text. Right limbic people (the humanists) prefer group learning, story telling and personal experiences.

Multiple intelligence. Bringing together results of a wide range of studies such as effects of brain lesions, phenomena of idiot-savants and inadequacies of IQ tests, Harvard Prof. Howard Gardner found that in fact there are eight distinct types of intelligence. Each type has its preferred and most effective learning style:

- visual/spatial
- verbal/linguistic
- logical/mathematical
- bodily/kinesthetic/tactile
- musical/rhythmic
- interpersonal
- intrapersonal
- naturalistic

Emotional intelligence. Popularized by Daniel Goleman, emotional intelligence was first proposed by Professors John Mayer (University of New Hampshire) and Peter Salovey (Yale University). It is composed of five domains that neatly spans Gardner's intrapersonal and interpersonal intelligences.

Constructivism. Widely popular among educators is the concept, supported by experimental studies and personal observations, that learning is more effective when the learner is actively doing and discovering (e.g. practicums) than passively listening (e.g. lectures). Hence, learning is more effective for a student when it is connected to whatever he is already doing or he wants to do.

For managers, differences in learning styles among people also have implications on optimum work assignments and functions, composition of team members and planning of HRD interventions.

Expect more in our knowledge era, that the learner-customer is king.

J1

KM IN LOCAL DEVELOPMENT

The practice of knowledge management (KM) is rapidly coming into the local development scene. What lessons and tips can we pick up from what is happening? (*KM hints below will be enclosed in parentheses*).

NEDA's Knowledge Emporium marked the entry of KM into the highest development planning agency of the Philippine government. The Knowledge Emporium is a vehicle for sharing of development knowledge (***KM hint**: sharing of good or best practices is the most immediately useful and most common KM practice*)

In 2000, the Philippine Council for Sustainable Development (PCSD) – a policy advisory body with secretariat at NEDA set up by former President Fidel V. Ramos following our government's commitment at the UN Conference on Environment and Development at Rio de Janeiro in 1992 – started a web-based infrastructure for monitoring progress of various government and non-government organizations (NGOs) in sustainable development (SD).

PCSD is composed of representatives from NEDA, DENR, DFA and several NGOs. This is the PCSDNet, which is linked to an SD best practices exchange network among other national councils in SD (***KM hint**: an ICT-enabled network is usually the first infrastructure for KM*).

According to Director Joey Virtucio of the NEDA Agriculture Staff, PCSD's intent is to next develop PCSDNet to serve as a vehicle for exchange of local knowledge in sustainable development. Phase Two in the development of PCSDNet will identify and develop/tap existing communities (***KM hint**: this is a community-building approach to KM*) of SD practice, who will decide what content they need to bring into the PCSDNet (***KM hint**: this is the less expensive but more effective "knowledge-pull" approach in KM, not the more common "knowledge push" approach*)

An earlier start in sharing and exchange of SD knowledge had been made by an NGO, the Philippine Sustainable Development Network. Executive Director Amy Lecciones calls it the "SD Village" and it is accessible via the Internet. As expected, there is a close formal and informal link between the PCSDNet run by the government and PSDN run by the civil society (***KM hint**: knowledge networks, if interconnected, benefits both*). In fact, ICT experts of PSDN like Dulce Cacha, James Jasmines and Zeni Ugat helped NEDA design and prototype PCSDNet.

An interesting development is a memo of understanding for knowledge partnership and sharing between two development entities: NEDA and UNDP. It was signed by two champions of KM: Secretary Romy Neri and UNDP Resident Representative Debbie Landey.

Aware of the benefits of KM, UNDP headquarters in New York had made a much earlier policy decision to manage and leverage on its huge repository of

development knowledge. I suggested to UNDP program manager Elcid Pangilinan that one way to operationalize this NEDA-UNDP partnership the Filipino way (most UNDP Manila office staff are Filipinos) is to encourage personal and professional friendships between NEDA and UNDP staff performing similar functions (*KM hint: this is what Sveiby calls the "personalization" approach to KM, versus the ICT approach*).

In 2004, the UNDP Global Environment Facility Small Grants Programme started a more systematic procedure for managing development knowledge gleaned from its more than 160 past and current projects over the last 12 years. Best practices or How-To-Do-It leaflets as well as Vignettes or insightful stories about best practitioners have been written.

A process for gleaning development knowledge from best practitioners, namely, a Lessons-Learned Meeting tailored to the grassroots level had been piloted (*KM hint: in KM language this is codification of tacit knowledge*).

Another process for face-to-face sharing of development knowledge, insights and "development wisdom" among practitioners had been piloted (*KM hint: this is tacit-to-tacit knowledge transfer*). National Coordinator Angie Cunanan is happy that for the first time, the Programme has a first-pass Knowledge Management Manual geared to its special requirements.

Another UN development agency, UNICEF, also practices KM. UNICEF information resource manager Tito Rodriguez, whose masters thesis at UP National College of Public Administration and Governance (NCPAG) is on KM, helped set up several Knowledge Centers on Women and Children all over the country.

In a previous article, I mentioned in passing about the local government knowledge sharing network (or LOGOSHARE) that is being developed by Galing Pook Foundation (GPF) is worth looking into.

Since the famous Gawad Galing Pook was established by the Asian Institute of Management about a decade ago, GPF had amassed a wealth of knowledge about best practices in local governance. They have shared this knowledge via the web and printed documents but recently they realized it is time to manage this knowledge more systematically.

Under the LOGOSHARE project, GPF in cooperation with PSDN and CCLFI.Philippines (an NGO assisting in personal and organizational change and learning), is developing and testing a vehicle for knowledge sharing: a community of local development practitioners starting with the municipal and city planning and development coordinators/officers (*KM hint: this is another case of strengthening/building a community of practitioners*). They believe it is this community that should determine what knowledge must be banked (*KM hint: user-driven KM*) and so a virtual Help Desk will be set up at GPF, to be back-stopped by a pool of volunteer experts in various aspects of local governance.

Other development-oriented KM (versus corporate or private-sector oriented KM) programs are installed at the World Bank Office in Manila, SEARCA or the SEAMEO Regional Center for Graduate Study and Research in Agriculture, Asian Development Bank, and the League of Cities of the Philippines' CDS Project (formerly CDSEA or City Development Strategies Executive Association).

I hope you picked up useful hints here. If you know of other local development initiatives employing KM, kindly email me (serafintalisayon@gmail.com) about it. Sharing knowledge multiplies benefits (*and that's another **KM hint!***)

J2

KM IN THE PHILIPPINE GOVERNMENT

Knowledge management (KM) practitioners often ask this type of questions: "What did we learn from doing this activity?" or "What can we learn from observations of this process?" or "From many experiences of doing something, what worked best?" What didn't work? The aim is to know better what action is most effective in work, and even in life.

Observing how knowledge management is being adopted in several government agencies in the Philippines, we can learn a few things about these processes: What drives the initial adoption? What are the facilitating and hindering factors to adoption, and to sustainability?

One of my students in KM at the Asian Institute of Journalism and Communication, Dennis Baldago of the Supreme Court, indicated their intention to initiate a KM program in the Third Branch of the Philippine government. "Hurry up", I said, "the other two Branches are ahead of you".

At the Office of the Presidential Adviser for Special Concerns, Deputy Presidential Adviser Abraham Purugganan had started a KM Division over a year ago. Abe is a retired major and an ICT expert and businessman before joining the government. About two years ago, when now National Economic and Development Authority Secretary Romulo Neri was still the Director General of CPBO (Congressional Planning and Budget Office) which is the think-tank in the House of Representatives, he together with his deputy Rodolfo Vicerra initiated the establishment of a KM Systems Bureau.

The bureau absorbed the EDP unit. After Secretary Romy Neri left Congress for NEDA, RV took over the helms of both CBPO and KMSB. One of the initiatives that Romy started at NEDA is the establishment of a virtual "Knowledge Emporium" whereby government and private sector actors can exchange and share knowledge for the benefit of small and medium-scale industries.

What do we observe here?

Firstly, leaders who understand and appreciate KM are those who initiate KM in these government agencies. They champion and advocate KM.

But secondly, the limiting factor they all experience is government appropriation. This limitation is felt most at KMSB, which is an institutional level of commitment to KM, and somewhat at OPASC in Malacañang, which is only a program level of commitment.

At NEDA, the "Knowledge Emporium" is implemented like a project by the NEDA MIS Staff headed by Director Daniel Pabellon. It is not an expensive project,

because it rides on the NEDA homepage maintained by Dan's staff and the existing extensive regional networks of NEDA. Besides the NEDA boss and Dan, the Knowledge Emporium is also championed and pushed by NEDA Assistant Secretary for Regional Operations Nestor Mijares. Thirdly, we see in RV Vicerra, Dan Pabellon and Ting Mijares the support of second-echelon leaders who "catch the KM virus" after the top leader initiates KM.

The common limiting factor is insufficient government appropriation. This means that we may need a KM champion in one or more congressmen/congresswomen or senators in the next Congress to remove this limitation. After two waves of interest in the past decade, namely in ICT and then in e-commerce, we need the fire up a third wave of interest in the next Congress, this time to push the Philippines into the global knowledge economy.

The deepest level of institutional commitment to KM in the Philippine government is taking place at the Development Academy of the Philippines. DAP does not depend on Congress for appropriations. DAP earns every peso from the market like any private corporation.

Thus, when DAP started its Center for Knowledge Management (CKM) two years ago, they did not have to beg Congress for money. In essence, DAP is an institution that sells knowledge products and it was not a surprise when DAP President Eduardo Gonzales and EVP Segundo Romero led DAP in adopting, and reorganizing for, KM. Edgon and Doy are the KM champions in DAP. CKM absorbed three groups: HRD/OD group, ICT development group and the productivity/quality management or PQM group. It is headed by Director Elena Cruz. Lanlan has years of practice in PQM (DAP is the national productivity organization and national institutional focal point in the Asian Productivity Organization) and in setting up and managing best practices exchange network - areas of practice which greatly overlap with KM.

I entertain great hope in the role of DAP in spreading the "KM virus" in the Philippine government. DAP had run the Basic KM Course twice. They joined UP Diliman and UP Los Baños in introducing a formal KM course in their curricula. They have a line-up of various KM products and are lining up others for R&D and marketing starting in 2004.

There are a few other KM efforts in, or involving, the public sector but are driven by external funding and the KM orientations of the funding agencies:

- City Development Strategies Project (formerly CDSEA), a knowledge banking/exchange project undertaken by the League of Cities of the Philippines and funded by the World Bank,
- The best practice exchange network for local governments being developed by Galing Pook Foundation and funded by IDRC of Canada via PanAsia,
- The KM framework/strategy project of the Department of Health funded by the World Health Organization,

- The ICT/KM framework project for the House of Representatives funded by UNDP,
- A KM operational framework project for the DILG Local Government Resource Centers funded by CIDA's Local Government Support Programme, and
- The KM training of DILG staff for operating DevWatch and LPPMS (Local Productivity Performance Measurement System) that is funded by AusAID.

The Lessons-Learned Meetings that the Malampaya Multipartite Monitoring Team (MMT) is planning for this summer may eventually evolve into a larger best practices exchange mechanism among all MMTs being monitored by the DENR Environmental Management Bureau. Malampaya MMT is funded by Shell Philippines Exploration.

The most institutionalized and well-funded is CDS, which employs a full-time Knowledge Manager, Teddy Baguilat, the former Governor of Ifugao. The current National Coordinator, Vicky Antonio who took over after the previous head Bebet Gozun left to become Secretary of DENR, was the previous Knowledge Manager. The KM processes at CDSEA reflects the KM culture and practices of the World Bank, which had as a matter of bank policy adopted KM starting in 1997. In fact the World Bank calls itself "The Knowledge Bank." Similarly, the KM priorities of AusAID and PanAsia are reflected in the projects they are funding.

So, what did we learn?

At least three:

- Put KM champions in positions of responsibility.
- Build KM from ICT capabilities/appreciations.
- Get adequate funding, whether from national appropriations or from international grant agencies.

J3

MANAGEMENT OF KNOWLEDGE IN 76 PHILIPPINE FIRMS

by Vivien T. Supangco, DBA

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The conscious management of knowledge has become a hot topic in recent years. However, there is no consensus as to how the concept is to be defined. To make matters even complicated, some authors like Erik Sveiby (*The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*, 1997) argue that knowledge is a human faculty and cannot therefore be managed except by the individual her/himself.

Still, the meaning of a concept can be derived from what people in this practice are actually doing. As a process, it covers such activities as generation, codification and transfer. Generation of knowledge includes creation, adaptation, acquisition, and synthesis. Codification includes the capture of knowledge in forms that may be used by others. Knowledge that has been codified can now be transferred, which involves its movement from a source to a user or from one point to another. Thus, while the conscious management of knowledge may be new, companies have already been managing knowledge although perhaps unconsciously.

Knowledge can be embedded in patents, customer lists, market research, products, and processes. Knowledge of this sort is labeled explicit knowledge because it lends itself to be codified and retained in some concrete forms and are therefore easily transferable. Some knowledge is tacit; it remains in people's heads only because it is difficult to articulate such as that found in firm routines and cultures. Here lies the challenge of knowledge management – in figuring out what people in organizations already know and how to share and enhance it.

What is the state of knowledge management in Philippine-based organizations? In September 2001, the Research Committee of the Personnel Management of the Philippines conducted a study on the "State of Knowledge Management in Philippine-Based Organizations," with the objectives of determining the extent to which companies consciously manage knowledge and finding the relationship between knowledge management initiatives and performance. Seventy-six companies participated in the survey.

The study revealed that there still seems to be a gap between the recognition of the importance of managing knowledge and actual efforts towards this end. A little over three fourths of the companies in the sample acknowledged the importance of consciously managing knowledge in their organizations. However, only 61.8 percent reported that their companies had varying degrees of efforts aimed at managing knowledge in their organization.

Knowledge grows as it is shared. However only about a quarter of the respondents acknowledged that a knowledge-sharing culture was already in place in their organizations. This finding does not augur well for maximizing returns of knowledge. Most often, the most important knowledge lies in the minds of the people in the organization. When these individuals leave the organization, valuable knowledge goes with them. Because knowledge is a human faculty, it may be diffused through social interaction. Such social interaction also allows the generation of new knowledge. Sharing knowledge, for example best practices, enables employees to avail of knowledge that already exists. There is no need to reinvent the wheel.

The research also revealed that the companies had varying degrees of sophistication in generating, storing, transferring or sharing knowledge in the organization. While the companies had relatively more developed systems for generating knowledge, those of storage and transfer need to be improved. For example, more companies encourage employees to seek information through face-to-face interaction and the company intranet than those that deliberately codify and store knowledge generated through these venues.

One might wonder why knowledge management has become a hot topic lately. It seems that the way to compete in a more complex marketplace is to be able to efficiently utilize the knowledge companies already have and to create or find what they do not yet have. Advocates of the resource-based theory argue that firms develop and sustain competitive advantage when they are able to leverage resources that are unique, and difficult to imitate. Knowledge is one such resource. Actively generating, storing and sharing knowledge are important because knowledge is dynamic. It has meaning only within a given context and time-- it could become irrelevant and obsolete --thus the need to be properly managed.

The survey generated interesting insights about knowledge management in selected Philippine companies.

The survey revealed that the higher the company's level of sophistication in knowledge management, the higher is perceived organizational performance – a finding that is consistent with the above view. The study also revealed that the bigger the organization, the more sophisticated is its knowledge management initiative.

While most respondents acknowledged the need for knowledge management, several companies still need to put in place a culture conducive to efficiently manage knowledge. Companies also had more developed venues for generating knowledge but storage and transfer had yet to be improved.

The survey also supported the case for knowledge management in the sense that the level of sophistication of knowledge management was positively correlated with perceived organizational performance.

J4

BAD STARTS IN R&D

I have many friends who are inventors. They are creative, spirited and full of energy in pushing their inventions. But many of them are also poor and bitter; they keep complaining that the government falls short of their expectations in helping them promote and “commercialize” (the term Filipino inventors use for marketing) their inventions. They have spent their time, talent and treasures to do what they like to do: invent. But they keep complaining that the government does not do its share.

Filipino inventors I know are likeable as friends. They are never short of enthusiasm. They are driven by high achievement drive and dreams of winning the WIPO award in yearly DOST Inventors Week exhibitions. I could see that inventing is part of their nature to express themselves. When I joined the government of President Fidel V. Ramos, many of them visited my office asking the government to promote and commercialize their inventions. I had a hard time helping many of them because I could not readily imagine the typical Filipino consumer buying the products they invented.

Something was bothering me and I could not see it readily at first.

Together with Atty. Fidelino Adriano, who was Director of the Philippine Invention Development Institute of DOST many years back, I interviewed the few millionaire Filipino inventors as part of a study for the World Intellectual Property Organization. I discovered how differently they think and operate. I noticed a common approach. Whereas the less successful (and poor) Filipino inventors would start whatever invention project strikes their fancy or interest, the more successful (and wealthy) inventors would not start developing an invention unless there is a request from a client or they see a clear market demand. The latter also estimates the cost of production of the invention, in relation to how the price that customers would be likely to be willing to pay. In short, the more successful inventors have a business frame of mind.

Every year, during Inventors Week exhibitions, you see many different *kalans* or kitchen stoves displayed by creative inventors. These *kalans* never sell well. Why? They address a consumer need or problem that is being solved satisfactorily in numerous ways. Another solution no matter how novel is unlikely to succeed above the rest.

In other words, the *kalan* inventors are undoubtedly good problem solvers but they are poor “problem finders”. Presto! That is the root of the problem of poor inventors: they are good inventors or problem solvers, but they chose the wrong problem to solve!

The problem of poor inventors was not inadequate commercialization. The root of the problem occurred earlier: wrong “problem identification”. They made a bad start in R&D.

Something similar is taking place in the Philippine academe. When professors or researchers apply for a DOST or university research grant, can you guess who usually identifies the R&D topic? The professor or researcher himself! Of course, in his research proposal, the professor would claim how important the proposed R&D topic is, and enumerate reasons why the research should be funded. And, as expected, the topic selected falls along his academic area of specialization.

In the Philippine academe – and I have been there for four decades – I have observed that it is rare that an R&D topic was identified after market research. Businessmen or entrepreneurs who need and would buy the outcome of R&D are rarely consulted. And what perpetuates the system is this: most of the people who make the decision whether or not to approve an R&D proposal are also either academics or came from the academe.

A former DOST official, Flaviano R. Pagador, said:

“The personal interest of the researcher/inventor is often the dominant factor which determines what technology to develop with little regard to the market requirement. As a result, the technologies/inventions developed are oftentimes irrelevant to the needs of the market and end-users.

“During the research and development process, the ultimate users of technology, e.g. the entrepreneurs and manufacturers are rarely consulted. The process is confined to people in the [academic] institutions and in most cases, to the few people in the research team.”

Thus, two things happen in the Philippines: (a) financial resources for R&D coming mainly from the government are scarce, and (b) those scarce resources are deployed in many R&D topics that are hardly market-driven.

I was once asked to give a lecture before regional directors of DOST about the “mature” technologies that they are responsible for promoting or selling in their areas of responsibility. To drive home my point, I asked them *“who among you are willing to resign from your jobs and go into business yourself applying the technologies you are now promoting?”*

No one raised his hand.

When researchers from Philippine academe and from R&D institutions start resigning to go into technology-based businesses themselves, I said, then that will be day when at last Philippine R&D has become truly market-driven.

J5

OUR CYBERTEAM'S OBSESSION WITH TECHNOLOGY

by Nilo N. Poso

[Nilo N. Poso is the CEO and Chief Software Architect of Infostructure Systems & Consulting Corporation, which he runs mostly via Internet and text. At present, Infostructure markets its homegrown BOS/e iTechnology platform with a suite of enterprise applications such as BOS/e Business Engine, BOS/e PeopleWARE, BOS/e Finest LOBs, and iBOS/e WebShell counting large companies like Bank of the Philippine Islands, Texas Instruments, Del Monte Philipines, Bank of Commerce, McDonald's Philipines, and Unilab As its clients. Nilo has a Master in Technology Management (MTM) from UP Diliman.]

Some people that I meet can't help but wonder how our company, Infostructure, which competes fiercely with the big guys in the local IT industry, gets to deliver its commitments to its 150 or so customers (from Philippine Top 500) with only 35 fulltime people in its payroll.

What could possibly be our secrets? We'll, I would say that our obsession with technology might be one, and the never-ending calibration of our people's skills and business methods the other. Thanks to our obsession with technology, we test the knowledge synergy among our cyberteam members that we eventually build into our products.

Let me tell you our story.

An obsession with email technologies

When we started doing business in January 1992, even if there were only three of us in the office, we preferred emailing to each other than sitting down and discussing things out. We've set up our PCs to let Novell's CCMail run automatically upon boot-up. CCMail was our best friend for quite sometime until Outlook silently crept into one's PC and then in a matter of days, everyone has shifted to it. It's not Outlook's functionality (since CCMail has pretty much similar features) but it's its Windows display (techies call it user interface) that took our breath away.

When we saw the first sign of the Internet, we immediately tried it to free our customers from attending to their PCs whenever we send files through dial-up connection. The Internet has vanished a lot of our headaches in connecting with our customers and business partners. However, it was quite awkward at first since we have to use two email systems: Hotmail or Yahoo to send emails to our clients and partners and Outlook to send emails internally.

Soon after, we put up our company's web site (www.infostructure.com.ph) and began using its built-in email software. It was a big relief for all of us because we eliminated Yahoo/Hotmail and simplified our lives with an integrated email system for internal and external messages.

Next obsession: instant messaging/chat technologies

But Hotmail and Yahoo persisted in making us go back and use their services again (or so we thought). Both offered online messaging service but we picked Hotmail's Messenger because it worked natively with Windows. With Messenger, we knew when a customer or a colleague is online and we could have quick chat with him/her as we wish. When not online, we used ePop to quickly popup a message in one's monitor thus freeing us from picking up the phone just to say a few words to someone who is several cubicles away.

Next love: our homegrown Intranet/Internet enterprise portal

It's our very own BOS/e iTechnology, however, that provided the platform for our 'infostructure system', which powered our website and gave us our bread and butter. Specifically, we've used its iBOS/e WebShell and BOS/e Business Engine applications in building our corporate intranet. They are the same software packages that we used in building the HR Intranet and Employee Self-Service Facility of our clients.

Testing our cutting-edge cyberteam technologies

Whenever we are on a fieldwork, we would simply look for an Internet Café nearby to check out our website. We would then log on to our individual My iBOS/e workspaces to browse the project eBooks for the major issue that was resolved by the project team lately. We would also enter our activity forecast for the forthcoming week, which everyone is required to post online using an eForm.

For Project SOLs - that's our name for the project leaders; SOL stands for strategist, orchestrator and leader - they would browse the activity forecasts of their staff using eBrowser and they would post their weekly project status reports, which I review religiously and meticulously.

If they want to get the list of staff who are already free from any project assignment, they would simply click an eQuery. Or if they want to see the latest graph on the recent customer satisfaction survey, they would click the corresponding eGraph for it.

Most people at Infostructure receive a text allowance every month for texting anyone any work-related messages. In one nerve-wracking situation, for instance, an InfoStaffer, who was installing iBOS/e software in a geothermal company in Ormoc, texted his team mate in Manila for an S.O.S. support. The CEO on a plant visit has just arrived and he wanted to see the HR Intranet in a few minutes. After exchanging several texts for a while, the InfoStaffers have finally settled on having online chat. In a jiffy, the technical problem was fully resolved and the program patch arrived just in time.

A living laboratory for next enterprise software applications

Perhaps, even if there were hundreds of people in our company, we would probably still be using the same technologies though configured differently.

To be sure, things will be very different a few years from now and at Infostructure, we have already braced ourselves for it. Our InfoInnovation Group will be releasing an alpha version by third quarter of BOS/e iTechnology J2.NET, the technology upgrade of the Windows-based BOS/e iTechnology version that is currently in the market. It will fuse the best of Sun Microsystem's J2EE and Microsoft's .NET technologies. It will also utilize the services of renowned enterprise software technologies like Oracle 9i AS, IBM Websphere among others.

As far as we're concerned, we see our company as a breathing laboratory where we try and test the software that we create before we get them to the hands of our customers.

J6

SDVillage.ph: SHARING BEST PRACTICES

by Amy M. Lecciones

Executive Director, Philippine Sustainable Development Network

[Amy Lecciones is Executive Director of the Philippine Sustainable Development Network Foundation, a non-profit Internet service provider, since 1993. She coordinated PSDN training courses, e.g. information packaging, information systems, webmastering (twice yearly), and ICT forum series. She was involved in helping plan the Philippine Biodiversity Information Network and presently in designing a prototype information network on sustainable development for NEDA.]

When Apin asked me to be a guest writer, I was very flattered since it is not everyday that people like me get to write on a topic very close to my heart, namely, sustainable development. How to explain “sustainable development”

June 5 was declared World Environment Day by the UN General Assembly in 1972 to mark the opening of the historic Stockholm Conference on the Human Environment. The theme for this year’s celebration is “Give Earth A Chance”, and when we talk of these things, we unavoidably touch on the term “sustainable development” (SD).

For the past decade or so, even we who claim to be conversant with the term “sustainable development” have difficulty explaining it. So how do we expect to reach out to people out there to adopt it as a way of life if the concept cannot even be explained clearly?

There had been popularizations of SD in brochures, pamphlets, posters, and other media, but we at PSDN (Philippine Sustainable Development Network Foundation) wanted something more tangible. How can we show examples to demystify this “sustainable development” thing? How can we help an ordinary mortal relate to and maybe even appreciate SD?

An NGO in cyberspace

PSDN is a small non-profit NGO with very limited resources but being an Internet service provider, we have somewhat this edge of being able to put information on the Internet even as way back as 1994, when the Philippines was just starting out in cyberspace. The reason for existence of PSDN is simple and straightforward: to make information accessible to support the goals of sustainable development.

We thought that there should be concrete examples of how the SD concept was actually applied by people and communities that others could refer to or even copy. The idea: sharing of SD best practices on-line

So the idea of coming up with a website for sharing of best practices in community SD practices and strategies jelled. I wrote the proposal and got lucky. After almost a year of waiting, we got a grant from the Royal Netherlands Embassy.

The initial 20 stories were launched in November 2000 under the Website SDVillage.ph. The website makes freely available strategies and technologies that work, facilitating technology transfer and replication of successful efforts at the local level. SDVillage.ph elicited quite a number of inquiries. These inquiries were coursed through either email, telephone and in some cases personal visits to the PSDN office.

The human sides of SDVillage.ph

Most of these inquiries were on the method being used by the Teoville Homeowners Association (THA) in their Zero Waste in the Home Project. Whenever we get inquiries like this, we readily refer them to the contact person for that particular project. In this case, our good friend Ms. Celia Giron of the THA always makes herself available for inquiries and helpful tips.

The PNOC has a Social Forestry Project which they also published in a book entitled "Mountains of Triumph".

Right after the 2001 elections, we had some inquiries from newly elected government officials who were looking for projects they can implement in their own communities. One new mayor got interested in how Puerto Galera was able to successfully put up a water system, harness the community to put in labor as counterpart from the community, and implement an efficient collection system thus paying the waterworks system loan on time.

The Zamboangita strategy was quite popular. It is a way of making the old carabao dispersal program successful along with the strategy of transporting farmers and their produce to the weekly tabuan (market day) for free, and a "Barato Baroto Program". The latter offers loans to fisherfolks so they can buy their own bancas with a very easy payment terms.

A good model for the urbanites is the "High-Rise Composting" at Alexandra Condominium in Ortigas. Those residing in the city should take a look at this, if they can do it at the rooftop of Alexandra, you can do it anywhere!

SDVillage.ph is now almost two years old, and the PSDN, with its meager resources strives to maintain the site. Zeny Ugat, SDVillage's Webmaster manages to add stories from time to time.

Come share your success stories!

We have plans of expanding the site to include a collection of best practices on wetland management at the community level with the Society for the Conservation of Philippine Wetlands this year. We realize, however, that updating the site will take more than just the zeal of PSDN staff and its network.

I know there are similar stories of SD strategies out there that needs to be shared. We are encouraging individuals and organizations to post your stories or strategies on this Website by sending an email to info@psdn.org.ph. We will be more than grateful and happy for your contribution.

J7

ELECTRONIC PERFORMANCE SUPPORT SYSTEMS – MAKING KM APPLICATIONS USABLE

by Victor L. Magdaraog

[Victor L. Magdaraog is Vice-President of SGV-Development Dimensions International, the local affiliate of Development Dimensions International. He is a board member and past President of the Philippine Computer Society (PCS); founding director of the Philippine Internet Commerce Society (PICS); a member of the Management Association of the Philippines (MAP); President and Board member of the Knowledge Management Association of the Philippines (KMAP) and a member of the Rotary Club of Makati North.]

The common question asked about knowledge management is “what to do with all this knowledge”. Imagine standing in the world’s biggest library and wondering, “How do I use all knowledge in this library?” Connect to the Internet and you have at your fingertips a richer source of knowledge. You can literally drown in the Web’s sheer size. Knowledge management (KM) can be daunting. Applications make knowledge acquisition and classification easy, but other challenges arise.

KM is not only about collecting knowledge. It is about making knowledge useful. It should have high usability value – value that not only addresses interface design, information architecture, etc. but results in better workforce productivity and “quality of life”. Knowledge must be relevant and significant. Useful knowledge is anchored on performance improvement.

An Electronic Performance Support System (EPSS) does this. Gloria Gery, an authority on EPSS defines it as “an integrated electronic environment that is available to and easily accessible by each employee and is structured to provide immediate, individualized on-line access to the full range of information, software, guidance, advice and assistance, data, images, tools, and assessment and monitoring systems to permit job performance with minimal support and intervention by others.”

The Help function in any software application is a form of EPSS. Others call it as an electronic job aid. There are very sophisticated EPSS applications that guide in making complex decisions.

EPSS improves performance by making processes simpler, provides timely and relevant information, and/or offers a decision support system. EPSS supports various performance needs, like product knowledge, process management, compliance issues, etc. It can be an online coach and tutor for day-to-day management issues.

My organization, Development Dimensions International (DDI) has OPAL, short for Online Performance and Learning. DDI associates around the world access OPAL via the Internet. OPAL provides tools to build skills and perform better on the job using a clear intuitive interface right at our computers. With its three

components, DDI associates access resources for handling tough work situations (Advisor), call up an electronic mentor for professional development (Developer); and conduct online skills assessment (Assessor). The Advisor is an example of a decision support system, the Developer provides performance information to accomplish a task, and the Assessor is an application that simplifies the processes of generating feedback from other employees.

Advisor: Decision Support System

The Advisor helps the DDI associate face tough situations like important customer negotiation meetings. Via the Advisor, I can list critical aspects that I need to address while negotiating. It helps plan difficult performance reviews, work conflicts, and other job-performance issues. It provides guidelines on how to introduce changes such as introducing new business processes. I can access practical tips, guidelines, pointers, and pitfalls with a click of the mouse.

Developer: Professional Skills Development

Developer helps the DDI associate gain skills in a variety of important business competencies. Developer fosters both intellectual understanding and the skills to put that knowledge into practice. Users get in-depth content for competencies as well as guidelines, on the spot help, and behaviors. Leadership is not acquired by simply attending a single leadership course. It requires continuous practice and application. Developer offers development activities and actions that will hone leadership skills.

Assessor: Skills Assessment and Feedback

Feedback is the most direct way to identify strengths and weaknesses and to improve performance. The challenge is how to generate useful feedback from a variety of sources. DDI associates use Assessor to target strengths and development areas. DDI associates can use a survey from a list of surveys or create one to generate assessment ratings on competencies. The report includes a list of strengths and development needs. OPAL generates group results, including hyperlinks that take the employee directly and immediately to online development support.

DDI associates receive expert guidance on challenging work situations (a form of decision support system), build skills in important business competencies (performance information needed to perform development tasks), and use online tools to receive feedback (process simplification).

DDILink: Projects Knowledgebase

While OPAL helps access knowledge concerning people related situations; DDI also has an award-winning intranet application called "DDILink" which allows users to access product and business knowledge. DDILink also allows access to

project implementations in various parts of the world and use these experiences to craft project implementation for local clients.

DDILink simplifies processes like proposal development. By using a variety of templates, or accessing a proposal development team, we can rely on vast knowledge and experience of consultants who have successfully or unsuccessfully worked on similar projects. The experience and learning generated by these associates are useful knowledge for future project implementations. DDILink captures most of this knowledge. This is useful to the DDI consultant and the benefits cascade to the client. Thus clients learn vicariously too. DDILink features have consistently provided timely and responsive assistance to DDI associates and indirectly to clients.

Advantages are similar to those found in OPAL. As I work with a multinational client in the Philippines, I access the experience of global associates who have done similar work. Thus I am able to respond quickly to client's needs. In some occasions, I provided clients information regarding projects implemented in their affiliate offices quicker than they would have accessed it through their own channels.

DDILink is an application that provides business and product knowledge, while OPAL provides people and organization knowledge. Most KM applications focus only on technical knowledge.

These applications are examples of how EPSS translates knowledge management from concept to real application that contributes to productivity and provide business results.

Usability makes it all worthwhile.

J8

CORPORATE SELF-IMAGE: UP DILIMAN

By Celia Tobia-Bulan

Professor, University of the Philippines

[Dr. Celia Tobia-Bulan teaches Speech Communication, Group Dynamics, Intercultural Communication, and Qualitative Research at the College of Arts & Letters, Department of Speech Communication and Theatre Arts, College of Arts & Letters, UP Diliman. She obtained her masteral degree in Business and Government Administration at the Ateneo, and her Ph.D. in Education (major in Educational Administration) at the UP College of Education.]

In Lewis Carroll's "Alice's Adventures in Wonderland," the caterpillar asks: *"Who are you?"*

Alice replied rather shyly, *"I hardly know, sir, just at present...At least I knew who I was when I got up this morning, but I must have changed several times since then."*

Alice could easily stand for a corporate outfit in today's competitive world of business where the turbulent environment can urge you to shift gears or stay put until things settle down. Depending upon your corporate strategy, you could be like a chameleon that adapts quickly to its environment or an elephant that is so slow to change because of sheer size. Or your company could squander its many resources in directionless fashion, becoming amoeba-like, puzzling out whatever fits the present. Or prefer to relax in your smug and established market niche because you have cultivated a long-lasting alliance with clients.

Or if you were an academic organization, you might not even feel threatened by vicissitudes in the environment because of a tenacious belief in your self-worth.

Whether personal or organizational, your self-concept influences how you decide and act. According to Civikly (1981), self-concept embraces "the ways in which we think about and describe ourselves and the extent to which we like those descriptions of ourselves."

UP Diliman is a nearly century-old knowledge institution. The self-images of its various constituencies shape how they think, feel and make decisions. What are these self-images? My studies revealed several interesting metaphoric themes.

When asked what car, boat/ship or airplane part UP Diliman as an organization can be compared to, many of the responses can be categorized into the "prospector" (40% of responses) and "defender" type (32%) following Miles and Snow's typology of strategic action (prospector, analyzer, defender or reactor). The university, as a prospector, is viewed primarily as one who conducts surveillance of the environment for new opportunities and products, and secondarily as a defender who maintains and protects its turf.

"Defender" and "reactor" types together constitute 39% of responses. Hence, the UP Diliman community seems to consist of two countercultures: an entrepreneurial, forward-looking group and a conservative, tradition-valuing group.

When asked what animal, plant or living organism UP Diliman resembles, many respondents used animal metaphors, and among these the most predominant is the high-need high-dynamism or "chameleon" metaphor (24%), followed by the high-need low-dynamism or "elephant" metaphor (10%). Interestingly, the fast-adapting or progressive chameleon type and the slow, lumbering and stable elephant type echo the technological dichotomy above.

When technology-based metaphors are categorized into "new" and "old" of Keizer and Post (1996), the new outnumbers the old.

UP Diliman seems polarized – dichotomously split into dynamism and traditionalism, risk and innovation as against safety and stability.

When all responses are classified by core themes, the highest proportion are cognitive (31%) and mechanical (20%). However a significant 12% is clearly affective and 15% are relational.

I feel that an additional organizational metaphor, suited to the feeling and personalistic Filipino culture, is needed to more fully understand even a largely cognitive-mechanical knowledge organization such as UP Diliman, namely, "the university as heart" metaphor.

This affective metaphor is exemplified by a mix of negative and positive comments from respondents, such as *"being overworked and given attention only when it malfunctions," "mahirap pa sa daga (poorer than a rat), "not cared for enough," "vicious, all power being thrown around but not considering low salaries, structural weaknesses," "a rose of caring," "nurturing branches," "you carry your UP experiences wherever you go."*

The last response reminds me of a lady-doctor who finished her medical studies in the UP way back in the late sixties and is now a medical luminary in her field of Pediatric Neurosurgery in New York. She looks back with gratitude for having been a scholar of the nation and so comes here at least once or twice every year to offer her skilled hands, alert and sharp mind plus a compassionate heart to delicate pediatric surgical patients in third-rate public hospitals in the country. She, along with East Coast-based Filipino doctors, wend their way home each year.

This doctor's tatak, or trademark, bears the UP training and education – of world-class caliber. She, therefore, symbolizes and embodies the UP corporate self-image from which ensues some or much of corporate self-esteem. For to produce an exemplar is to proclaim the existence and operation of a culture that holds excellence as its highest value.

But the prevailing cognitive-mechanical theme is disconcerting.

A librarian-friend of mine once caught me by surprise when she answered my query "*What does UP mean to you today?*" She quipped: "*UP is an assembly line that produces intelligentsia for export.*" I could sense my shoulder muscles tensing up. Is this the university's present self-image which it doesn't want to admit? Does it find corporate self-esteem in being described thus?

If the UP is an intellectual factory assembling knowledge, skills, and attitudes for placement in foreign countries, especially the First World, to become merely this exacerbates our plight as a developing Third World nation, if it does not altogether do a grave disservice to the Filipino people majority of whom are in want. How then should the UP manage its resources, talents, and cerebral power to move beyond being a font of learning or an oasis of knowledge? Or a mere intelligent manpower exporter?

Like Alice confronted by the caterpillar, its corporate self-concept must be honestly examined.

J9

KNOWLEDGE MANAGEMENT AT THE HOUSE OF REPRESENTATIVES

by Rodolfo V. Vicerra
Deputy Secretary General
House of Representatives

[Mr. Rodolfo Vicerra is Deputy Secretary General at the House of Representatives in charge of the Congressional Planning and Budget Office, the economic policy think tank of the House. In 2001-2002, Speaker De Venecia tasked him to set up and head the Knowledge Management Systems Bureau of the House. Much earlier, he was Planning Officer at the Guarantee Fund for Small and Medium Enterprises and was Research Analyst at the Home Development Mutual Fund. 'RV' presently also teaches part time at the UP School of Economics where he finished his B.S. Business Economics cum laude. Mr. Vicerra earned his Master in Development Economics degree from Williams College, Massachusetts.]

The Problems

The House of Representatives is host to a tremendous amount of knowledge and information. In the course of legislative work, thousands of pages of research materials, position papers, legal opinions, official deliberations, personal testimonies, not to mention the bills and resolutions, pass through the various committees and units of the House.

The problem is that most of these materials are difficult to find and access -- for some reasons.

Manual tracking. Firstly, any one of the scores of Committees and units of the House could be dealing with a particular set of materials as called for by legislative process. Original copies of bills are first filed with one unit, the Bills and Index are then processed under the Committee system with inputs from experts, civil society, and interested parties. These are then referred to the Plenary for further debates.

Typically, many Congressmen have to send their staff to different offices within the Batasan complex just to know the actual changes that may have happened to a legislative proposal.

Islands of information and knowledge. Secondly, knowledge of the existence, content and the sources of the submitted materials would often be limited to the members and the staff of the Unit or Office handling a particular topic. Even in-house researchers sometimes face difficulty accessing information from within. They are likely to get more information from outside sources.

No network, no sharing. Thirdly, the House simply does not have an effective Intranet infrastructure to encourage greater information sharing among its various units. That's right! They have hundreds of computers within the Batasan

premises but these remain stand-alone PC's of varying vintage – useful only for typing and solitaire.

Poor Internet access. During the 11th Congress, individual dial up Internet access was provided to all offices in the House – but not to everyone's satisfaction. The service was so poor that just connecting to the ISP took so much time. If a connection got through, it routinely broke off in ten to twenty minutes.

Eventually, that ISP service was discontinued.

The Solution: the Knowledge Management Systems Department

A computer enthusiast once queried: "who's really in charge?" One may be tempted to point to the House IT department. But the unit was only at the level of a division with limited access, let alone support, from top management and House leaders.

It was against this backdrop that Speaker Jose de Venecia, Jr. created the Knowledge Management Systems Department (KMSD) at the House of Representatives. The KMSD is actually the merger of the House IT Service and the Planning and Management Information Service and some CPBO staff.

It was formed out of the realization that, even at the manual level, the various units of the House of Representatives do not yet have an effective system of information and knowledge sharing – among themselves and with their principals.

The KMSD sees itself as a provider of planning, management and ICT services and an integrator of critical knowledge functions, knowledge-based assets and processes. Its mission is to promote knowledge-sharing, process improvement and a culture of continuous learning within the House of Representatives. KMSD also aims to develop and maintain knowledge-sharing systems with the e-public and partner institutions.

First Priorities

Just recently approved by Department of Budget and Management (DBM) as a new department within the House Secretariat, the KMSD is looked upon as being responsible for the establishment of the ICT infrastructure at the House of Representatives. Indeed, its key officers have lost no time lobbying House leaders for a Local Area Network and internet access, but only in that order.

As a matter of priority, KMSD sees technology as only a function of the information needs of the organization. Its first real task is to coordinate with the various House offices and units for the online generation of the reports and updates on policies and legislation.

This month, KMSD will be piloting the web-based database interface programs now being developed by its programmers. For this purpose, a limited number of

computers principally those that will be generating the reports, journals and updates will be connected to a LAN.

Next Steps

The KMSD is now developing the on-line Legislative Information System (LEGIS) that incorporates not only the statistical information on bills and resolutions, but also the full text of the bill and position papers through various stages of the legislative process.

The House Website, www.congress.gov.ph, shall be redesigned to allow public access to the LEGIS and to provide links other government websites and data sources as well as electronic bulletin boards and chat bins on an array of public policy issues.

Other potential services, including GIS-linked socio-economic databases at the district level as well as VPN linkages with policy research centers in State Colleges and Universities (SUC's) in the regions, are now being discussed in future plans. But these would probably require a modicum of ODA assistance for capacity building and the establishment of technical standards and connections.

Looking Forward

KMSD understands that the essence of democracy is shared information. Only with the right information can there be political will. And only with the proper knowledge judiciously used at the appropriate time can leaders be really effective.

In partnership with other House units, KMSD hopes to help improve the efficiency of information services to Congress members. Doing so, the Department hopes to be instrumental in promoting greater transparency and enhancing the responsiveness of the legislative process not only to House Members and other Secretariat units but also the general e-public.

J10

SETTING UP KNOWLEDGE CENTERS ON WOMEN AND CHILDREN

by Augusto S. Rodriguez

[Tito Rodriguez is Information Resource Management Officer of UNICEF Manila, Philippines.]

Following the 1990 Convention on the Rights of the Child, the Philippine government and UNICEF agreed to adopt a program of cooperation to promote and assist in the mobilization of a Child Friendly Movement.

According to the Convention, a set of goal indicators was established which participating countries pledged to monitor and achieve. These goal indicators included:

- (a) child survival – maternal health, child health and nutrition;
- (b) child development – universal access to basic education and literacy;
- (c) child protection – child labor, children from indigenous communities, commercial and sexual exploitation of children, children in specially difficult circumstances (at war, in conflict with the law, children with AIDS, victims of child abuse and neglect);
- (d) child participation – participation in community affairs, membership in civic and other community organizations.

The strategy mix to promote child rights and the Child Friendly Movement consists of advocacy, technical support and capacity building, model building and service delivery focused on selected provinces and cities to reduce disparities. It involves forming a network of informed advocates to improve access and use of information on women and children for policy advocacy, social mobilization, resource mobilization, project implementation, capacity building and monitoring and evaluation at the local and national level.

To operationalize this, the Knowledge Center on Women and Children has been established. The center is a “one-stop resource center” which serves as a repository of information and materials (references, posters, leaflets, videos, pictures, statistical tables, thematic maps, etc.) on children and women for use by programme managers, implementers, trainers and researchers. The center also serves as a place where functions and activities concerning children and women are coordinated. It is a place where programme staff can access and download information from the Internet (when available), send email and get in touch with other groups interested in the welfare of children.

There are now 16 Knowledge Centers in the 25 provinces and cities. There are three at the national level. There are also around 5 provinces that have set up their own Knowledge Centers at their own initiative. Although the center is primarily for use of programme implementers, some knowledge centers also serve as a place where children visit and enjoy books, videos and access learning materials. The center is usually equipped with a computer, telephone, fax,

photocopier and video equipment to facilitate data collection, processing, storage and dissemination of knowledge.

The process of setting up a Knowledge Center is not an easy task especially in a government, nonprofit institution. The usual concerns about lack of budget, equipment, IT infrastructure including political will and attitudes of workers are just among the many constraints encountered. The key to successful implementation is a unifying activity that serves a purpose, interesting enough for the people concerned to maintain and sustain even without monetary reward. This unifying factor is the Child Info Software, the centerpiece of the Knowledge Center.

The Child Info software is a database and presentation program developed for UNICEF by the Community Systems Foundations under the guidance and supervision of UNICEF Regional Office for South Asia, Kathmandu, Nepal and the UNICEF East Asia Pacific Regional Office, Bangkok, Thailand. The software addresses the perennial concern of unsystematic storage, retrieval, analysis and presentation of data and information on children. The software puts together key data on women and children pertaining to health, nutrition, education, communication, protection and participation. Hence, when information on children is required to do a report, proposal or an advocacy material, all that a researcher or programme implementer has to do is access this using the software at the Knowledge Center.

UNICEF invested heavily in the technical training, provision of computers and printers to the Knowledge Centers. The institutional counterpart is the space, manpower, supplies, and maintenance cost of the center. A knowledge network composed of technical personnel from agencies supplying and using the data ensures that the database is updated regularly. Data may come from surveys or regular monitoring forms collected by these agencies. The knowledge manager who maintains the knowledge center produces tables, graphs or maps and packages these into reports, newsletters, posters or PowerPoint presentations for use in policy advocacy and implementation. Provinces are encouraged to prepare a Provincial State of the Children's Report to be delivered by the governor during October, the Children's Month.

There are still however, much more that needs to be done. Aside from proactively initiating data updates, there is a need to bring the level of discussion and use of data from merely presenting "what is" to "what can be done". There is a need to generate action, results and impact out of the knowledge derived from the data and information generated.

For more details on how to set up Knowledge Center on Women and Children, contact (02) 892-0611 local 325 & 317 or visit www.unicef.org/philippines. UNICEF is organizing a series of Child Info training this year. To participate, send a letter of recommendation duly signed by your local chief executive or agency head to UNICEF. UNICEF is providing free board and lodging for participants to the training. Your institution should be willing to shoulder your transportation cost and should be ready to set up a Knowledge Center upon completion of the training.

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Managing knowledge in an upstart start-up

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A start-up is an amusing creature. In essence, it is an up-start.

The characterization, however, lends itself to reason. Dynamic, risk-taking, flexible, and non-hierarchical – a start-up prides itself in these up-start qualities. But a start-up armed with knowledge management (KM) is all these plus a very strong sense of empowerment. Knowledge Solutions Inc. (KSI) was fortunate to begin with this mental frame. KM gets special credit.

Entrepreneurial Context

When my partners and I came together over a year ago to form KSI, we wanted to take advantage of the market's need to step up management of its players' intellectual capital. The knowledge era makes this essential. This market focus provided the balance for our entrepreneurial exuberance (confidence of being able to do anything and everything with little), which was an all too important entrepreneurial quality.

We positioned KSI as a business consulting company in the field of knowledge management, specializing in documentation. Because consulting is a cut-throat business, KSI is therefore not without issues. But the collective KSI endorphin level proved helpful in dealing with the challenges.

First, being a start-up, internal systems are organic in the sense that they are established from practice. Having a flat and flexible organizational structure is a strength, especially in the knowledge industry. Nevertheless, this kind of structure can also be a weakness because it can result in loss of efficiency and focus. For a lean company, this can be very expensive.

Second, KSI partners wear different hats. We are owners, managers, messengers, project consultants, department staff, utility and maintenance experts, and sales agents. Owing to our different roles, we need to swim in a vast sea of eclectic knowledge. The need to build on each other's knowledge and experience is, therefore, acutely felt.

Documenting Lessons Learned

Since KSI is a project-based firm, it is doubly important for us to ensure that knowledge from projects is codified. We realized that:

(a) We have to continually accomplish our project documentation excellently to facilitate the re-use of lessons and learning. In other words, project documentation is instrumental in transferring knowledge from one project to another. Also, the findings from evaluation sessions like Lessons Learned Meetings are appended at the end of the consolidated project dossier upon conclusion of the project.

(b) Project documentation is instrumental also in transferring knowledge from the brains of the project consultants (tacit personal knowledge) to KSI's corporate stock of knowledge (explicit public knowledge). The latter affects the development of services and even the organization's internal systems.

Through documentation, knowledge of best practices and standard operating procedures are culled from project experience and can now be transferred and re-used. Not to document would mean re-inventing project methodology because nobody bothered to make templates, document the work processes, or make sure that past research material are archived and referenced.

As a basic step in documentation, we fraternized with matrices in organizing our data. To indulge any feigned ignorance, matrices are wonderful tables that are easily done in a spreadsheet, for instance. This can later be migrated to a content management solution (through a strategy like XML, for instance).

In this context, we found that using matrices that can be sorted and searched is a very good idea for a knowledge-based start-up. It prepared us for a knowledge base. Particularly, we used matrices to begin building a repository of data that flags updates, new document versions, and how these are used in KSI's deliverables. This proved very useful, especially in a work environment that is fast-paced.

Without good documentation, managing several KSI outputs that each go through several quality control steps within the KSI team and the client's team, can potentially become a horrendous nightmare.

Tracking Knowledge Evolution

Tracking tangible and intangible outputs. Documentation not only helps all parties (KSI included) check if they are getting value, but it also reminds us that we have reached milestones. The significance should never be underestimated. In times when the project is not moving forward, past weekly reports can tell you that certain issues and dependencies are still not resolved either with the client or our own project team. The deliverables of service firms like KSI are also often composed of intangibles. Hence, KSI always takes note of our intangible outputs in recognition that our intellectual assets make up the bulk of our resources.

Tracking for future approaches. A weekly progress report tracks KSI milestones in the delivery of consulting, liaison, and management services. When KSI started, it was important for us to track the evolution of our processes, methodologies, and

milestones. Inputs from our documentation helped us in framing our strategies. Documentation, which includes commentaries on the client's internal culture and politics, also comes in handy for future approaches to project management.

Aiming to be Cutting-Edge

Who wants to keep re-inventing the wheel or keep missing out on learning opportunities? If you are to chart a path towards being cutting-edge, to document or not to document shouldn't be among your dilemmas anymore. Instead, documentation coupled with appropriate and scalable technology is already regarded as a strategic component to developing your business. Not having a documentation strategy won't hold up as an excuse anymore.

You might as well say that the cat ate your strategy. And you won't get an A for effort.