Introduction to Knowledge Management

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Agenda

- Global Trends
- Emerging Challenges
- Basic Concepts of Knowledge
- Technology Transitions
- Understanding Knowledge Management (KM) and Knowledge Management Systems (KMS)
- Benefits of KM
- Causes of Failure and Success
- KM Characteristics and Timeless Principles
- Concluding Remarks
“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.”

Charles Darwin
Our global village is facing a tremendous pace of change, making the business world more and more non-linear and unpredictable.

Knowledge is currently doubling every 18 months and, of course, the pace is increasing... Technology facilitates the speed at which knowledge and ideas proliferate.

Consumers have become “Prosumers”; more educated, demanding and cognizant.

Knowledge appears to be the fundamental gradient of the global economy compelling organizations to adopt knowledge practices in their business strategies for gaining competitive advantages and adjusting to the dynamics of the changing world.
Emerging Challenges

The ever increasing dominance of knowledge as a basis for improving efficiency, effectiveness and profitability provokes many organizations to find means for leveraging intellectual assets in new and creative ways for gaining sustainable competitive edge in the local and global business world.
Basic Concepts

- **Data**: symbols

- **Information**: data that are processed to be useful; provides answers to "who", "what", "where", and "when" questions

- **Knowledge**: application of data and information; answers "how" questions

- **Understanding**: appreciation of "why"

- **Wisdom**: evaluated understanding.
Converting Data into Information

Davenport & Prusak (2000):

- **Condensation** – items of data are summarized into a more concise form and unnecessary depth is eliminated
- **Contextualization** – the purpose or reason for collecting the data in the first place is known or understood
- **Calculation** - data is processed and aggregated in order to provide useful information
- **Categorization** – is a process for assigning a type or category to data
- **Correction** – is a process for removal of errors
What is Knowledge?

Zeleny (2000) defines knowledge as the understanding, awareness, familiarity acquired through study, investigation, observation or experience over the course of time.

- Knowledge tends to be an important element of the work processes of most organizations
- Knowledge is expensive, because it comes from and involves people, and takes time and experience to create
- Knowledge is local, changing and has to be re-constructed regularly on the basis of experiences.
- Knowledge becomes ephemeral with the change of time and environments.
What is Knowledge? (Cont.)

"We know now that the source of wealth is something specifically human: knowledge. If we apply knowledge to tasks we already know how to do, we call it 'productivity'. If we apply knowledge to tasks that are new and different we call it 'innovation'." Only knowledge allows us to achieve these two goals"

Peter Drucker 1992 p23
Bloom’s Taxonomy

- **Knowledge**: Recall data or information
- **Comprehension**: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. (State a problem in one's own words.)
- **Application**: Use a concept in a new situation or unprompted use of an abstraction. (Applies what was learned into novel situations in the work place.)
- **Analysis**: Separates material or concepts into component parts so that its organizational structure may be understood. (Distinguishes between facts and inferences.)
- **Synthesis**: Builds a structure or pattern from diverse elements. (Put parts together to form a whole, with emphasis on creating a new meaning or structure.)
- **Evaluation**: Make judgments about the value of ideas or materials.
Key Verbs associated with BT

- **Knowledge**: tell, list, describe, relate, locate, write, find, state, name
- **Comprehension**: explain, interpret, outline, discuss, distinguish, predict, restate, translate, compare, describe
- **Application**: solve, show, use, illustrate, construct, complete, examine, classify
- **Analysis**: analyze, distinguish, examine, compare, contrast, investigate, categorize, identify, explain, separate, advertise
- **Synthesis**: create, invent, compose, predict, plan, construct, design, imagine, propose, devise, formulate
- **Evaluation**: judge, select, choose, decide, justify, debate, verify, argue, recommend, assess, discuss, rate, prioritize, determine
Bloom's Revised Taxonomy

David Krathwohl, revised Bloom's Taxonomy (2001)

- **Remembering** - Recognizing, listing, describing, identifying, retrieving, naming, locating, finding
- **Understanding** - Interpreting, Summarizing, inferring, paraphrasing, classifying, comparing, explaining, exemplifying
- **Applying** - Implementing, carrying out, using, executing
- **Analyzing** - Comparing, organizing, deconstructing, Attributing, outlining, finding, structuring, integrating
- **Evaluating** - Checking, hypothesizing, critiquing, Experimenting, judging, testing, Detecting, Monitoring
- **Creating** - Designing, constructing, planning, producing, inventing, devising, making
Types of Knowledge

Explicit Knowledge:
It exists in structured form that can be codified, manipulated, shared and documented in formal language, like mathematical expressions, statements in textbooks, policies, goals, strategies, papers, reports, etc.

Implicit Knowledge:
It is a set of explicable norms, experiences and non-captured know-how that have been neither documented nor codified.

Tacit Knowledge:
It is unstructured, highly personalized, and context sensitive. It is oral and intuitive in nature; difficult to capture, measure, manage, formalize or document like personal experiences, ideas, thoughts, etc.
Types of Knowledge (Cont.)

- **Embedded knowledge**: is referred to the knowledge that is locked in such elements as: Experience, Internalization, common practice, systemic routines, organizational culture, conventions, tradition, codes of conduct, common sense ethics, history, rules, laws, principles, contextual issues related to ethical, legislative and policy-related considerations etc.

- **Embrained knowledge**: is dependent upon conceptual skills and cognitive abilities determined by the ‘personal setup’ of the brain and on conceptual skills which enable recognition of underlying patterns.

- **Embodied knowledge**: relates to routines, habits, tasks and information our bodies understand without conscious thought.
Types of Knowledge (Cont.)

- **Encoded knowledge**: Encoded knowledge (collective-explicit) is fully explicit and conveyed by signs and symbols, such as books, manuals and codes of practice.

- **Encultured knowledge**: This knowledge is social and could not exist without the existence of the social groups. It is constantly evolving.

**Procedural vs Declarative Knowledge**

**Personal vs Organizational Knowledge**

**Internal vs External Knowledge**

**Key Questions**: How do we manage?
Technology Transition

- DBS/DBMS was invented to manage data for meeting the individuals/organizational record keeping and reporting needs.

- Data Warehouse and Data Mining was invented to extract knowledge for decision making and predicting future trends.

- Knowledge Management System was invented to make knowledge an invaluable asset of organizations; a guarantee of competitive success.
What People Think about Knowledge Management?

“Knowledge Management is not a software product or a software category. Knowledge Management doesn’t even start with technology. It starts with business objectives and processes and a recognition of the need to share information.”

*Bill Gates: Business @ the Speed of Thought*
Why do we need KMS?

- Sharing of data might be prohibited, but sharing of (the hidden) knowledge is not.
- Sharing of data may not be productive, but sharing of knowledge brings creativity, innovation and productivity.

Hence we need KMS

- To create knowledge repositories for reusability
- To improve knowledge sharing
- To enhance knowledge environment
- To manage knowledge as an asset
- To compete the local and global market
The Reasons for KM

- Information overloading made Information Management an un-manageable task
- In-effective and in-efficient information retrieval strategies led to irrelevant information retrieval.
- Right Information at right time became the guarantee of competitive advantages
- Just in time information has become a necessity.
- Knowledge has become an organizational asset.
- Increased need to capture employee’s tacit knowledge
- Technological advancement has made sharing of knowledge simpler and easier.
- Domain Complexity has increased intricacy of internal and external processes.
- The pace of change in business world has increased dramatically.
Immediate responses are required to take action based upon subtle changes.

Downsizing and re-engineering resulted in staff attrition and brain drain.

Knowledge has become the basis for improving efficiency and effectiveness.

Globalization and geographic dispersion has changed the business scope of organizations.

Increased complexity, market volatility and accelerated responsiveness have made decision making a complex and challenging task.

Knowledge has become the only sustainable differentiator and future success will depend on the ability to unearth it, organize it, and share it.
...Continued

- Employees need to be able to make better, more informed decisions, in consultation with all stakeholders, in less time.
- Increasing knowledge content 'intelligence' in products and services
- Decreasing life-cycles and time to market for products
- Hyper competition and innovation pressures
- Strong business focuses on innovation
- Critical need to be flexible, nimble and 'in-tune' with business world
What is KM?

• No easy and universally accepted answer; There are a number of positions one may take to mix and match the multiple perspectives available.

• Most have ties to how you think about knowledge and what you believe knowledge to be.

• However, KM is emergent; it takes on different forms, shapes and strategies in different environments and may not even look the same across organizations within the same enterprise.
Definitions

- Methodology for systematically extracting and utilizing knowledge
- Capturing, organizing, and storing knowledge and experiences of individual workers and groups within an organization and making this information available to others in the organization.
- Knowledge management is the name of a concept in which a company or organization consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge in terms of resources, documents, and people skills.
Definitions (Cont.)

- The way a company stores, organizes and accesses internal and external information. Narrower terms are: "Organizational Memory" and "Knowledge Transfer" (Process).
- The collection, organization, analysis, and sharing of information held by workers and groups within an organization.
- The process of systematically and actively managing and leveraging the stores of knowledge in an organization is called knowledge management. It is the process of transforming information and intellectual assets into enduring value.
Definitions (Cont.)

- Knowledge Management is eliciting and sharing the experience and intelligence of everyone working in a particular process.
- Strategic policy setting and information principles for Digital Asset Management (DAM), Document Management (DM), Content Management (CM), Web Content Management (WCM) and Records Management (RM).
- Discipline within an organization that ensures that the intellectual capabilities of an organization are shared, maintained and institutionalized.
A Working Definition of KM

Knowledge Management
• “creates/provides the right tools, people, knowledge, structures (teams, etc.), culture, etc. so as to enhance learning;
• understands the value and applications of the new knowledge created;
• stores this knowledge and makes it readily available for the right people at the right time; and
• continuously assesses, applies, refines, and removes organizational knowledge in conjunction with concrete long and short term factors.”
Understanding KM

- Understanding Knowledge Management requires an understanding of knowledge and knowing how that differs from information and information management.

- KM is an effort to capture not only explicit factual information but also the tacit information and knowledge that exists in an organization, usually based on the experience and learning of individual employees, in order to advance the organization's mission. The eventual goal is to share knowledge among members of the organization.

- “Knowledge management (KM) is an effort to increase useful knowledge within the organization. Ways to do this include encouraging communication, offering opportunities to learn, and promoting the sharing of appropriate knowledge artifacts.” McInerney, C. (2002).
Essence of KM

• Knowledge is first created in the people’s minds. KM practices must identify ways to encourage and stimulate the ability of employees to develop new knowledge.

• KM methodologies and technologies must enable effective ways to elicit, represent, organize, re-use, and renew knowledge.

• KM should not distance itself from the knowledge owners, but instead celebrate and recognize their position as experts in the organization.
Three Major Components

- **People** - The combination of leadership, organizational structure, and culture that influences participation of individuals, and the organizations with which they are associated.

- **Process** - The procedures, methods, policies, and approaches through which an organization performs activities which support KM.

- **Technology** - The set of computer, communication, and network-based tools that enable & facilitate faster, better, and cheaper management of knowledge.
Share of Major Components

- **80%** - Organizational processes and human factors
- **20%** - Technology
KM Processes

Nonaka and Takeuchi’s (1995) knowledge processes

- **Socialization:** the process of transferring tacit knowledge from one person to tacit knowledge in another person.

- **Externalization:** the process of making tacit knowledge explicit among individuals within a group.

- **Combination:** the process of knowledge transferring once converted in explicit form.

- **Internalization:** the process of understanding and absorbing explicit knowledge into tacit knowledge held by the individual.
KM Processes (Cont.)

Tannenbaum and Alliger (2000)

• **Knowledge Sharing:** the extent to which people share their knowledge.

• **Knowledge Accessibility:** the extent to which people have access to the information they need to make decisions, solve problems, perform job tasks and service customers.

• **Knowledge Assimilation:** the extent to which people learn or assimilate the knowledge they need to perform well;

• **Knowledge Application:** the extent to which people apply or use knowledge to effectively make decisions, solve problems and service customers.
KM Processes (Cont.)

Rastogi (2000)

- **Identification** of the knowledge required for a competitively effective implementation of enterprise strategy.
- **Mapping** the existing and available knowledge including expertise and skills.
- **Capturing** the existing knowledge through its formalized representation.
- **Acquiring** needed knowledge and information including know-how.
- **Storing** the existing, acquired, and created knowledge in properly indexed and interlinked knowledge repositories.
- **Sharing** knowledge through its automatic access and distribution to users on the basis of their needs and interests.
- **Applying** in support of decisions, actions, problems-solving, providing job aids and training.
- **Creating**, generating or discovering new knowledge through R&D, experimentation, lessons learned, creative thinking and innovation.
KM Processes (Cont.)

Probst (2002)

- **Identification** is the process where external knowledge for analyzing and describing the company’s knowledge environment is identified.
- **Acquisition** refers to what forms of expertise should the company acquire from outside through relationship with customers, suppliers, competitors and partners in co-operative ventures.
- **Development** is a building block which complements Knowledge Acquisition. Its focus is on generating new skills, new products, better ideas and more efficient processes.
- **Distribution** is the process of sharing and spreading knowledge which is already present within the organization.
- **Utilization** consists of carrying out activities to make sure that the knowledge present in the organization is applied productively for the benefit its.
- **Preservation** is the process of selective retention of information & knowledge.
KM Processes (Cont.)

Pasha’s KM Process (2012):
• Knowledge Discovery and Detection
• Knowledge Capture and Codification
• Knowledge Organization & Assessment
• Knowledge Sharing
• Knowledge transfer
• Knowledge Acquisition
• Knowledge verification
• Knowledge utilization
• Knowledge Creation
• Knowledge Reuse
Definition of KMS

- **Knowledge management systems (KMS):** the synergy between latest technologies and social/structural mechanisms

- **Enabler of knowledge management:** a platform facilitating extraction, storage, retrieval, integration, transformation, visualization, analysis, dissemination, and utilization of knowledge
Parts of a KMS

• Knowledge Discovery Systems

• Knowledge Capturing Systems

• Knowledge Sharing Systems

• Knowledge Application Systems
KM Cycle

- Creates knowledge through new ways of doing things
- Identifies and captures new knowledge
- Places knowledge into context so it is usable
- Stores knowledge in repository
- Reviews for accuracy and relevance
- Makes knowledge available at all times to anyone
Example Activity

- Project experiences are captured in reports, evaluations and studies.

- This experience is then synthesized into knowledge products in various forms, with learning from other sources adding a valuable dimension.

- Knowledge products and services are primarily disseminated online/via the internet, with some available as printed versions, in recognition of the fact that a number of stakeholders find it difficult to download documents from the internet.

- Efforts are also made to ensure that this knowledge is applied and used (also called "uptake") in order to improve practice in a continuing cycle.
Effective KM

- **Cuts costs** (solutions are reused once created, not duplicated, and the solutions that are reused are the best) (a.k.a. Best Practices)

- **Improves quality of products, services, business processes, and employee performance** (best practices are continually identified, shared, reused, and further improved in a continuing process)

- **Improves speed** (providing network-speed accessibility to relevant knowledge resources, and taking duplication of effort out of enterprise processes, increases the speed of business processes)
Benefits of KM

- Produces and conserves new value - such as “Intellectual Property Assets”
- Opens new markets while developing and implementing new business models thus increasing revenue
- Enables sustainable organic growth by lifting productivity and efficiency
- Improves decision-making through mitigating risks
- Builds more profound relationships and ongoing mind-sharing with customers
Benefits of KM (Cont.)

- Unleashes new ideas and creativity to create a more adaptive, responsive, dynamic, intelligent and flexible organization
- Uses knowledge to build virtual businesses
- Improve and accelerate Learning by improving the flow of knowledge across the organization
- Gather superior business and competitive Intelligence to anticipate the future
- By enhancing team collaboration and coordination, maximize the organization's use of available collective wisdom, experience, and the brain-power of human capital assets
Benefits of KM (Cont.)

- Shifts employees from balance-sheet expense items to knowledge equity investors in the enterprise
- Improves the ability of the organization to manage change
- Retain motivated, loyal, and committed talent
- Introduce a more relevant knowledge-based measurement instruments as compared to mere industrial age metrics
- Turns process know-how into a valuable corporate asset - Knowledge Conversion
Benefits of KM (Cont.)

- Lowers operating costs by substituting information and knowledge stores for inventory
- Avoids waste and duplication by encouraging knowledge reuse
- Creates a more knowledge aware, knowledge friendly culture, and community of practice(s) better suited to the emerging knowledge-based economy context
- Allows more leveraging of knowledge assets through knowledge arbitrage strategies
- Extends the global reach and scope of the enterprise
Benefits of KM (Cont.)

- Bring a new level of sophistication to managing the brand, reputation, and Intangibles
- In general, be better able to create, capture, share, protect, disseminate, package and exploit knowledge, intellectual capital, and intangibles
- Build mutual trust among knowledge worker and management and facilitate cooperation in handling time-sensitive tasks.
- Ensure better relationship with partners.
- Enhance employee’s problem solving skills.
Causes of Failure

- Having poor leadership.
- Pursuing KM without being ready.
- Viewing KM as technology or a human resources area
- Failing to modify the compensation system to reward people working as a team.
- Placing too much emphasis on technology.
- Building a huge database that is supposed to cater to the entire organization.
- Introducing KM into the organization via simple project to minimize possible losses.
- Lack of trustworthy open environment.
- Lack of commitment
- No incentive to use system
- Lack of integration
Factors Leading to Success

- Senior management Commitment and support
- Appropriate organizational culture
- Organization needs multiple channels for knowledge transfer
- Needs awareness
- Appropriate technical and organizational infrastructure
- Economic value to organization
Adopting KM

Need to think:

• Are we getting the most from our current knowledge implementation?

• Have we thought how can we use IT systems to prevent reinventing-the-wheel and how can we improve our efficiency utilizing the available knowledge?

• Are we ready to help developing an overall KM implementation strategy?

• Are we ready to help implementing KM on a practical level.

• Are we ready to improve ourselves or our staff’s understanding of KM?
KM Enabled Companies

- Benetton, General Electric, National Bicycle, Netscape, Ritz Carlton, Agro Corp, Frito-Lay, Dow Chemical, Outokumppu, Skandia Switzerland, Steelcase, 3M, Analog Devices, Boeing, Buckman Labs, Chaparral Steel, Ford Motor Co, Hewlett-Packard, Oticon, WM-data, McKinsey, Bain & Co, Chevron, British Petroleum, PLS-Consult, Skandia AFS, Telia, Celemi, Skandia, WM-data, Buckman Labs, IBM, Pfizer, WM-data, Affaersvaerlden, Honda, PLS-Consult, Xerox, National Technological University, Matsushita, IKEA
KM Timeless Principles

Know your:

- Strengths, Skills, Values
- Achievements
- Environment
- Weaknesses
- Opportunities
- Threats
KM Timeless Principles
(Cont.)

• Know what you “know”
• Know what you “do know”
• Know what you “need to know”
• Know what you “don't know”
KM Culture Characteristics

- Creativity, Innovation
- Authority, Competence
- Openness, Fairness, Sincerity
- Motivation, Dedication
- Commitment, Consistency
- Collaboration, Participation
- Cooperation, Teamwork
KM Culture Characteristics (cont.)

- Tolerance, Change Management
- Conflict Resolution
- Self-Development
- Self-Management
- Strong Belief in Work Ethics
- Entrepreneurial Outlook
- Risk Management
- Global Mindset
KM Competencies

• Negotiating Skills
• Mentoring Skills
• Leadership Skills
• Problem Solving Skill
• Critical & Analytical Skills
• Consensus Building Skills
• Communication Skills
• Collaborative Skills
• Facilitation Skills
• Persuasion Skills
Knowledge Capitalism

Intellectual Assets are the Currency of Today’s Economy
Today’s Economy values

“Knowledge Capitalists”
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