

# Integrated Approach to Knowledge Management Initiatives Programme: Towards Designing an Effective Knowledge Management System

**Juhana Salim, Masnizah Mohd**

Faculty of Technology & Information Sciences,  
Universiti Kebangsaan Malaysia,  
Selangor, MALAYSIA  
*js@ftsm.ukm.my; mas@ftsm.ukm.my*

&

**Mohd. Shahizan Othman**

Faculty of Computer Science and Information Systems,  
Universiti Teknologi Malaysia,  
Johor, MALAYSIA  
*shahizan@fsksm.utm.my*

**Abstract:** *There have been varied opinions about the approaches, methods and implementation of knowledge management initiatives. The varied approaches can be integrated to ensure that the right knowledge can be created, captured, stored, and disseminated. In addition, managing both explicit and tacit knowledge will enable knowledge in individuals to be transferred and shared for new knowledge to be created, further expanded and embodying it quickly in new products and services, technologies and systems. One of the perspectives on knowledge management which is given much emphasis is the Japanese perspectives that focuses on cultural behavioural approach. This paper explains how the theory of knowledge conversion can be an influential element in knowledge management initiatives programmes. Another area that requires much attention is the tool and enabler that includes the application of technology and resources to enhance content intelligence to expedite access and reuse of the knowledge captured and stored. On the contrary, this paper highlighted on the issue whether access itself will have a substantial impact on business performance especially as mountains of new information are placed online. To address such issue, organizations need to consider the systematic approach that do not merely focus on process and technology. Thus, the cultural behavioural aspect of knowledge management discussed in great length is integrated into the knowledge management system architecture which is designed, based on the fact that knowledge management relies heavily on human intellectual effort and skills.*

**Keywords:** *Knowledge Management Initiatives Programmes, Knowledge Management System, Knowledge Conversion, Human Intellectual Approach.*

## INTRODUCTION

Knowledge management has often been perceived as basically the activities that involve capturing all the best practices and knowledge that people possess and storing it in a

computer system in the hope that one day it will be useful. It can be defined as the process of continually creating new knowledge, disseminating it widely through the organization, and embodying it quickly in new products and services, technologies and systems thus perpetuating changes within the organizations (National Electronic Library for Health 2001). Therefore, good knowledge management is all about getting the right knowledge, in the right place, at the right time. The right knowledge is the knowledge that you need in order to be able to undertake certain task, manage a project, make a decision or plan strategically, interpreting a piece of research or deal with suppliers and many others of the kind. The right knowledge can be obtained from a variety of sources such as research reports, journal articles, manuals, technical reports, databases and web documents, databases and more often in peoples' heads. In managing knowledge, it is important to understand the concept of knowledge and the various approaches to knowledge management initiatives that can be integrated to ensure that the right knowledge can be captured, stored, disseminated, transferred and shared and accessed. This article discusses the concept of knowledge defined by various authoritative figures in knowledge management and several approaches and perspectives and proposed an integrative approach to managing knowledge resources. The cultural behavioural aspect of knowledge management is discussed in great length under the sub-topic, Japanese perspectives on knowledge management and is integrated into the knowledge management system architecture that was designed.

### *Understanding the Concept of Knowledge*

Knowledge can be defined basically as the body of information such as facts, opinion, ideas, theories, principles and models or frameworks (Ngeow 2003). KPMG Management Consulting (2000) defined knowledge as experience, procedures, statements, and concepts. Nonaka (2004) defined knowledge as, the commitment and belief and more of a reaction that includes the unique experience and knowledge present in the individual employee. He stressed that it is this knowledge that must be made explicit for new knowledge to be created. Knowledge also refers to a person state of being with respect to some body of information. Sveiby (1994) perceived knowledge as object that can be articulated in words and that when abstract knowledge is transformed and structured through words and symbols, knowledge can be disseminated, analyzed, criticized, synthesized and expanded to new areas of knowledge. Polanyi (1966) made the two distinctions of knowledge, namely explicit knowledge and tacit knowledge. Explicit knowledge is formal knowledge which can be articulated in language and transmitted among individuals. On the other hand, tacit knowledge is informal knowledge that is in a person rooted in individual experience and involving personal belief, perspectives and values. Thus, it can be deduced that a distinction need to be made between managing information and managing knowledge. Part of knowledge encompasses information such as facts, opinion, ideas, theories, principles and models or frameworks possessed by people and such information can be easily made explicit through codification and storing them in information systems. However, tacit knowledge that consist of unique experience, procedures, statements and concepts, beliefs and values present in the individual employee may not be easily captured and made explicit to enable them to be used to meet information and knowledge needed to fulfill certain task or objectives. Therefore, organizations must be exposed to varied initiatives and approaches to managing both explicit and tacit knowledge to ensure that these

knowledge be captured and shared for new knowledge to be created, further expanded and embodying it quickly in new products and services, technologies and systems.

## **APPROACHES TO KNOWLEDGE MANAGEMENT INITIATIVES**

Sveiby (2001) identified two tracks of knowledge: management of information and management of people. To researchers in the management of information track, objects can be identified and handled in information systems. For researchers in the management of people track, knowledge consists of “processes, a complex set of dynamic skills, know how, etc” that are constantly changing. People track seems to be the most promising because the issues are about how to maximize the ability of an organization’s people to creating new knowledge and on how to build environment conducive to sharing of knowledge. The questions are, “How do we maximize the knowledge created by our people? How do we create innovation enhancing environment?” Anyone can buy new knowledge management software but very few have the ability to create sustainable creative organization. It is the focus on people that forms the basis for Japanese knowledge management approach.

### *The Japanese Perspectives to Knowledge Management*

While the western emphasized on explicit knowledge, the Japanese believe that the whole idea about knowledge management is whether tacit knowledge can be converted to explicit knowledge. To increase the competitive advantage of companies, it is important to encourage innovation among staff. Nonaka et. al. (1994) stated that firms can create knowledge through the interaction between explicit and tacit knowledge which is a process called knowledge conversion. Knowledge creation consists of four modes of conversion processes and they are: socialization, externalization, combination and internalization. This essence in the theory of knowledge conversion emphasizes on the fact that an organization creates new knowledge by converting tacit knowledge into explicit knowledge and vice versa and that new knowledge is created through “synthesis” which is a continuous and dynamic process. Unlike information, the Japanese see knowledge as commitment and belief and more of a reaction. Therefore, the unique experience and knowledge present in the individual employee must be made explicit for new knowledge to be created. It is the reaction that does not involve force that enhances innovation.

Nonaka’s and Takeuchi’s theory of knowledge creation is based on the critical assumption that knowledge is created and extended through social interaction between tacit and explicit knowledge. The exchange of knowledge is a social process between individuals and also between individuals and organization. On the other hand, the West focuses on explicit knowledge, measuring and managing of existing knowledge and only the selected few are responsible for knowledge initiatives activities. According to Takeuchi (1998), what the companies in the West need to do is to give attention to tacit knowledge, create new knowledge and get every employee in the organization involved. By involving all in the organization, only then can be said that an organization is a living organism that can create new knowledge on a continuous basis. However, creation of knowledge is just one area in knowledge management that needs be emphasized as there are other areas in knowledge management that supports a good knowledge management initiative programme. An area

that requires much attention is the tool and enabler that includes the application of technology and resources to enhance content intelligence to expedite access and reuse of the knowledge captured and stored.

### *Mechanistic Approach*

Mechanistic approach to knowledge management is characterized by the application of technology and resources to do the same better (Barclay & Murray, 1997). In this approach, it is mainly assumed that better accessibility to information is a key where by, the emphasis is in enhancing methods of access and reuse of documents which involves hypertext linking, databases, full text search and the like. Networking is also the key solution and it is technology and sheer volume of information that will make knowledge management initiatives work. The issue is, whether access itself will have a substantial impact on business performance especially as mountains of new information are placed online. To address such issue, one needs to consider the systematic approach that does not merely focus on process and technology.

### *Systematic Approach*

In the systematic approach, new thinking of many kinds is required. The basic assumption in this approach is its sustainable result, not process or technology (Barclay & Murray 1997). Another assumption is that resource cannot be managed unless it is modeled, and many aspects of the organization's discipline and technology and those traditional methods of analysis can be used to reexamine the nature of knowledge and to solve the knowledge problem. This approach sees the cultural issues as important. Employees may or may not need to be changed apart from looking into policies and work practice. Technology can be applied successfully to business knowledge problems. In this approach, it recognizes knowledge as an important management component but is not an activity that is only handled by managers alone. Apparently, the Japanese approach to knowledge management emphasizes the collaborative efforts among all levels of employees to share knowledge for new knowledge to be created.

### *Integrating Japanese Approach to Knowledge Management Initiatives*

Most knowledge management strategies generally are designed to make better use of the knowledge that already exists within the organization and create new knowledge. It is crucial for organizations to have knowledge on what the people in the organizations know. This is to prevent people in one part of the organization to reinvent the wheel or fail to solve the problem because the knowledge they need is elsewhere in the organization but not known or accessible to them. Therefore, it is usually the case whereby the first step to knowledge initiatives in companies is that of finding what people in the company know and taking steps to make knowledge accessible throughout the organizations. Such process relates to the capturing and dissemination of explicit knowledge through information and communication technologies whereby knowledge is codified, stored, disseminated and updated through computer networks. However, the organization that focuses completely on collecting explicit knowledge and makes little or no effort at linking people with people (so that tacit knowledge owned by some personnel within the same organization can be

transferred to others) tends to end up with having merely a repository of static documents.

Hence, it is equally important to link people who need to know with those people who do know. This means by linking people with people, the flow of tacit knowledge could be enhanced through better human interaction. In this way, knowledge that is embodied in people can diffuse around the organization and not just among the few. To support knowledge flow, online staff directory that gives details about who does what and who knows what, networks of people with common interest and collaborative working should be equally emphasized. Such dimension seems to be the main focus in Japanese knowledge initiatives. However, an organization that focuses entirely on connecting people with little or no effort at linking people with information (gathering of information) can also be very inefficient.

Knowledge management initiatives should be combining the benefits of the approaches discussed earlier to try and achieve a balance between connecting individuals who need to know with those who do know, and collecting what is learned as a result of this connection and making that easily accessible to others within the organization. Another important aspect to be incorporated into knowledge management initiatives is in creating the environment and providing support to enhancing knowledge creation and innovation. As pointed out by Malhotra (2004), knowledge management is often defined in terms of inputs such as data, information technology, best practices, etc, that by themselves may be inadequate for effective business performance. For these inputs to result in business performance, the influence of intervening and moderating variables such as attention, motivation, commitment, creativity and innovation as much emphasized in Japanese approach to knowledge management has to be better understood and accounted for in designing knowledge management initiatives models.

#### **A MODEL OF AN INTEGRATED APPROACH TO KNOWLEDGE MANAGEMENT INITIATIVES**

Having analyzed the various approaches and practices to knowledge management based on available literature and discussion with Takeuchi, Nonaka and Toyama, a model was constructed to ensure that the knowledge management programmes to be designed gives emphasis on a variety of aspects that will make the programmes efficient and effective. It can be synthesized that organization should focus on these five objectives of knowledge management (Junnakar <http://www.businessinnovation.ey.com>)

- i. Connecting people with other knowledgeable people
- ii. Connecting people with information
- iii. Enabling the conversion of information to knowledge
- iv. Encapsulating knowledge to make it easier to transfer
- v. Disseminating knowledge around the organization.

Figure 1 shows that the knowledge management initiative programme proposed here focuses on developing a knowledge friendly culture and knowledge friendly behaviour among people in an organization which should be supported by the appropriate processes, and which may be enabled through technology. Thus, the approach applied here is to think of knowledge management in terms of three components, namely people, processes and

technology. At the same time, knowledge management programmes must have two main dimensions which are basically collecting and connecting dimension.

### *People*

The 'people' component refers to the cultural and behavioral approach whereby getting an organization's culture right for knowledge management. This component is the most important but the most difficult challenge mainly because knowledge management is actually first and for most a people issue. Connecting people tends to be the main emphasis in Japanese knowledge management initiatives. Any business organization that intends to manage knowledge, needs a better understanding of knowledge processes and particularly of those involved in knowledge creation.

Nonaka and Takeuchi (2004) stressed on their starting point that knowledge is created by individuals. Knowledge management initiatives in Japanese firms have shown that the creation and sharing of knowledge can only happen when individual cooperate willingly.

#### **Figure 1: Knowledge Management Programme**

According to Nonaka, employees need to be given a lot of space to create and not controlled or monitored. It is this dimension that is being neglected in the scientific management advocated by Taylor (<http://faculty.ncwc.edu/toconner/417/417lect03.htm>). Japanese firms give emphasis on the cognitive dimension that sees organization as a living organism and not merely a machine that process information. In this context, the sharing of understanding on the company's vision, its mission and how to make the world something that is realistic is more important than processing objective information. When the importance of tacit knowledge is realized, employees will begin to think of new ways of innovation and see them as a total whole. This does not only involve nuggets of data. The commitment of employees and their confidence on the company's mission that they share together is important. Thus this paper explains in further detail how the theory of knowledge conversion consisting of the following modes mention earlier can be an influential element in knowledge management initiatives programmes.

The first mode in the knowledge conversion model is socialization. Socialization involves activities like brainstorming discussion and debate where people exposed their knowledge to others and test its validity. This is where individuals interact and create tacit knowledge through sharing experiences. The socialization process enables individual to acquire tacit knowledge by sharing experiences usually of a technical in nature. Through observation, imitation and practice, one can learn new knowledge and skills that may not be possible by merely reading manuals that may not be successful to make one to fully understand the skills that one may want to acquire.

The second mode in Nonaka's model is externalization which involves putting knowledge to use and this can happen when organizations make decision or state a goal. Transfer of knowledge from individual to group is known as externalization. It is the conversion of tacit knowledge into explicit knowledge so that others can share knowledge. It is at this mode that knowledge conceived by an individual is formalized and communicated to others. One way to convert tacit knowledge explicitly is by writing. Tacit knowledge not only involve know-how but also includes beliefs and mental models. Very often it is not easy to express

experience and know-how in words. Therefore, Japanese use metaphor as a way to express tacit knowledge to explicit knowledge, as personal experience may sometimes be inexpressible. In Japanese companies, managers use figurative language and symbols to articulate their intuition and insights. It is usually the senior managers that articulate metaphors, symbols and concepts that help to orient the knowledge creating activities of employees. An example of externalization is concept creation in new product development in which metaphor and analogy are often used.

Combination is the bringing together of diverse pieces of knowledge to produce new insights which is the third mode in the knowledge creation process identified by Takeuchi and Nonaka (2004). At this mode of knowledge creation, it is through the combination process that explicit knowledge is collected from inside or outside the organization and then combined, edited or processed to form a more complex and systematic set of explicit knowledge. One way is by collecting information from various departments in the organization and putting it together in a report. The report is considered a new form of knowledge as it synthesized data and information from many different sources. Another example is when tacit knowledge is documented in manual form or workbook and embodying it in a product. The new created explicit knowledge can then be disseminated among members in the organization. The knowledge can be disseminated and exchanged through various other media such as meetings, telephone conversations, or computerized communication networks. In fact, creative use of computerized communication networks and large scale databases can facilitate this mode of knowledge creation.

The final mode is internalization which happens when an individual is exposed to someone else's knowledge and makes it their own. In this mode, explicit knowledge is being transferred to the individuals. Internalization actually refers to learning by doing which involves the conversion of explicit knowledge to tacit knowledge. Articulation and internalization whereby after the process of converting tacit knowledge into explicit knowledge through the process of socialization, and using that explicit knowledge to extend one's own tacit knowledge, requires active involvement of the individual. All the experiences through socialization, externalization and combination are internalized into individual's tacit knowledge.

From the details given on Japanese knowledge conversion theory, thus it can be synthesized that for a knowledge management initiative programme to succeed, the culture of the organization must support on going learning and knowledge sharing. People should be motivated and rewarded for creating, sharing and using knowledge. There should also be a culture of openness, mutual respect and support and that should an organization be very hierarchical where knowledge is hierarchical, then people are reluctant to share.

However, it was mentioned earlier that by entirely focusing on the connecting dimension, that is connecting people, the knowledge management initiatives programme can be very inefficient. To achieve a balance, the collecting dimension involving linking people with information is just as important. The collecting dimension stresses on the knowledge sharing aspect, which involves the next important component in knowledge management initiatives, which is processes.

## *Processes*

In order to improve knowledge sharing, organizations need to make changes to the way their internal structure are structured and sometimes even the organizational structure itself. Organizations should look at the many aspects of how things are done in their organizations and ask the following: Which processes contribute to barriers to, or enablers of, knowledge management? How can these processes be adapted or what new processes can be introduced to support people in creating, sharing and using knowledge? Some practices in Japanese firms can help organizations to think of ways to improve knowledge sharing and thus to make necessary restructuring to an organization's internal processes.

In Nonaka's and Takeuchi's organizational knowledge creation processes as elaborated above involves constant social interaction between individuals in an organization, particularly within a working group or project team. The four processes of interactions is a spiral process that takes place repeatedly. An important point for this spiral process to remain active and ascending is that, it must take place in an open system in which knowledge is constantly exchanged with the outside environment. Japanese firms create a context in which people can share and view ideas. Interaction between individuals through meetings and discussions provide shared context in which individuals can interact with each other. For knowledge to be created, it needs a physical context. It needs a place to enhance exchange of views and ideas where by knowledge are not shared, but also can enhance the creation and utilization of knowledge. The Japanese refers such a place as 'ba'. According to Nonaka and Toyama (2004), leaders can build 'ba' by providing physical space such as meeting rooms, cyberspace such as computer network, or mental space such as common goals to foster interactions. 'Ba' can also be understood as the interactions between individuals that occur at a specific time and space. However, 'ba' is not only limited to a single organization but can be created across organizations. Individuals participating in a 'ba' can consist of suppliers, customers, universities, researcher institutions, local communities and government. The concept of 'ba' appears to be playing a central role in the knowledge creation process. It is the sharing of experiences and continued dialogue between parties concerned that can result in new products being developed. In Honda for instance, people are constantly discussing and this is made possible as the top management floor is an open space that enhance the discussion on issues openly. Xerox, USA provides convenient places where people can get together routinely. Xerox called it "distributed coffee pot" as such environment encourage cross functional links.

By adapting the processes elaborated above, organization can introduce these new processes to support people in creating, sharing and using knowledge. Another crucial enabler of knowledge that helps connect people with information and people with each other is technology. Technology is the third component in an effective knowledge management initiative programme.

## *Technology*

At the heart of the knowledge processes that is, socialize, externalize, combine and internalize, is connections. To facilitate those connections, first among knowledgeable people (by helping them find and interact with one another) and second, between people



and sources of information, information technology is definitely a key enabler to such connections. However, it is a misconception that knowledge management is mainly about technology. It is not just getting an intranet, linking people by e-mail and compiling information databases. It is vital that any technology used fits the organization's people and processes. Otherwise, it will simply not be used. Through information communication technologies, explicit knowledge can be captured and disseminated. Such collection of content, enables what is learned by people in an organization be made accessible to others in the organization and used in the future. This collecting dimension is thus the main emphasis in Western knowledge management initiatives. Comprehensive collection of information sources, and effective use of these sources by knowledgeable and skilled interpretation and subsequent alignment with the local context would lead to effective results. The management of information to enable connections should be based on these three trusts:

- i. To create repositories (data warehouses, operational systems) to house important information both quantitative and qualitative.
- ii. To cross link those repositories so that navigation is easy and the technology is transparent to users.
- iii. To improve organization's capabilities to perform, analyze in support of decision-making.

A variety of information and communication technology initiatives can be implemented as a big part of knowledge management programmes. Some of which includes:

- i. Database
  - Customer complaints in a database. For example General Electric (GE)

Answers

Centre USA has collected customers' complaints that support telephone operators in answering customers' calls. GE has programmed 1.5 million potential problems and their solution into the system.

- Knowledge databases containing experiences from assignment can be developed for others to refer. This has been developed by McKinsey and Bain & Co. (Sveiby 2001). Every experience stored in the database includes not only all the assignments undertaken, but also names of team members and clients reactions.
  - Best practices database. Chevron has created a 'best practice database that captures drilling conditions and innovative solutions to problems on site in a database for sharing globally with other sites (Sveiby 2001).
  - Databases on sales data, competitors' information and customers' survey.
  - Database of basic researches.
- ii. Directories
    - Directories of expertise. Mastic (Ministry of Science and Technology and Environment, Malaysia) has developed a directory of expertise to disseminate information to researchers and institutions of higher learning, government organizations and research institutions.
    - Other directories that may include suppliers, competitors, customers, institutions of higher learning, research institutions, local communities, or

- government agencies.
  - Online staff directory that gives details about who does what and who knows what, networks of people with common interest and collaborative working should be equally emphasized.
- iii. Yellow pages guide to company's knowledge and serving as points of contact for people seeking information about different subjects. This may include database on Communities of Practitioners.
- iv. Interactive knowledge management technologies
  - Interactive IT web pages such as e-business, e-commerce and online transactions.
  - Social media such as blogs and wikis which referred to Web 2.0 technologies or Web 2.0 platforms (Levy, 2009, Weinberger, 2007).
  - Full-text search engines.
  - Hypertext system based on information map noting the information required to support business activity and decision-making. This information map must consider qualitative or unstructured information; as well as quantitative information both from internal through intranet capabilities, and external sources through Internet facilities.
  - Internet/intranet capabilities.
- v. Data warehousing enabling interactivity and not just data and text archives value.
- vi. Collaborative workgroup software.

## **INTEGRATED APPROACH TO KNOWLEDGE MANAGEMENT SYSTEM DESIGN**

Figure 2 shows that the knowledge management system architecture proposed which is based on the above model, comprises of three important elements and they are: tools and platforms, people and elements and enablers. These three elements participation must be integrated in order for a knowledge management programme to succeed and they must support each other throughout the whole process.

### **Figure 2: Knowledge Management System Architecture**

#### *Tools and Platforms*

Tools and platforms are used to create knowledge and they appear in the forms of equipments and software. Data such as e-mail, instant messaging and alert notification are transformed into information and further processes will take place to transform the information into useful knowledge. These processes come in two forms which are the textualization and contextualization of work. With the aid of tools and platforms, one will be able to manage the multiple knowledge management functional needs of one's organization and the subsidiary organizations, and interconnecting them with customers and business partners, all in one place. Besides that, they also provide navigation and access to organizational knowledge management in a way that is simple and intuitive to use, and yet feature and function rich. Tools and platforms come integrated with a mass access feature which is the search engine that provides specialized search across all knowledge management application templates exist in a particular tool or platform. A knowledge management tool or software also provides a unique way to share files using a web browser

to ease the group access to knowledge. These two types of access; mass and group, are integrated to form a knowledge integration platform consisting of six sub elements namely: response statistics, centralized access, cross organizing sharing, cross reference to people, multiple format metadata and self organizing. Tools and platforms allow one to search for people across the organization and sub-organizations based on their profile information. Integrated within the knowledge management platforms is the ability to create hierarchical relationships between people. The six sub elements in the knowledge integration platform are collaborated into an integrated self-organizing knowledge application where its sub elements are formal knowledge. Repositories and forums are two important sub elements. Knowledge management tools allow one to create an unlimited number of document repositories with version control for multiple attachments. Besides that, these tools deliver knowledge management with discussion forums. An unlimited number of forums, sub forums, with or without response threading, may be created. Forums can be bookmarked and monitored, and responses can be edited for correction after being posted. Responses can be ranked for usefulness and searched by field as a means to mine useful information or identify organizational experts.

### *People*

The knowledge management process involves people, not only from the top-level management but from all levels. In order for a knowledge management programme to succeed, the participation and cooperation of workers from low level, middle level and top-level management must be encouraged extensively. These workers are inclusive of project managers, database suppliers and purchasers, marketing persons, newsletter publishers, Intranet and Extranet managers, SMEs, content aggregators, researcher analysts, customers, frontline employees and middle managers. Designing a knowledge management system should take a people-centric approach (Hazlett et al., 2005) and a dynamic participation and cooperation of these groups of people. Consideration also should be given on the web portal and search engines that enable mass access. On the other hand, the system should allow group access for members belonging to specific groups to store documents, provide document version control and allows file sharing. Apart from mass access and group access embedded into the KM system, to enable group collaboration, the system's architecture designed has included Message Board, Web Conferencing, Meeting Schedule/Workflow. To ensure free flow of communication, the system includes point to point communication, instant messaging, group e-mail Listing and Alert Notification, all of which enhance broadcast communication.

### *Elements and Enablers*

The last important element for a successful knowledge management is elements and enablers. From the earlier discussions on the types of knowledge and the various approaches to managing knowledge, it can be synthesized that knowledge is divided into three distinct types, namely: tacit knowledge, explicit knowledge and cultural knowledge. Tacit knowledge plays an important role in knowledge creation, explicit knowledge in knowledge sharing while cultural knowledge in knowledge utilization. These three distinct knowledge types are encapsulated by three organizational enablers and they are vision and strategy, roles and skills, and policies and processes. An organization's vision and strategy

are achieved by developing new mental models for a knowledge base enterprise to articulate the knowledge through Value Vision. The workers of an organization carry the responsibility of envisioning the organization’s goals and outcomes. Besides that, new roles such as leaders, middle managers and self-organizing roles should be added to an organization’s structure as knowledge management relies heavily on human intellectual effort and skills. Processes and policies enabler involves managing and measuring knowledge assets owned by an organization. Proper training, development and motivation should be emphasized onto the organization’s workers as knowledge sharing is behavioral and promotes cultural change. Table 1 lists a complete planning framework for managing knowledge.

**Table 1: Planning Framework for Managing Knowledge**

**Types of Knowledge**

**Explicit Knowledge**

**Knowledge Sharing**

- Well-defined projects
- Implementation approach
  
- Knowledge editors
- Knowledge analysts
- Knowledge architects
- Knowledge organization
- Intellectual asset management
- Workflow

**Cultural Knowledge**

**Knowledge Utilization**

- Culture
- Leadership
- Commitment
  
- Chief Knowledge Officer
- Project manager
- Motivation
- Learning and renewal
- Knowledge valuation

**Tacit Knowledge**

**Knowledge Creation**

- Envisioning goals, outcomes
- Leveraging human capital and intangibles
- Subject experts

- Mentors
- Communities of practice
- Knowledge sharing
- Best practices
- Training and development

Vision and Strategy

Roles and Skills

Processes and Policies

### **Organizational Enablers**

## **CONCLUSION**

There have been varied opinions about the approaches, methods and implementation of knowledge management initiatives. Sveiby's summary on 40 knowledge management initiatives undertaken by companies and practitioners around the world revealed how companies can create value from their intangible assets (Sveiby, 2001). Upon realizing that companies can gain tremendously by applying more structured and conscious knowledge management, this paper has addressed to the variety of information and communication technology initiatives that can be implemented as a big part of knowledge management programmes. The knowledge management initiative programme model proposed in this paper focuses on developing a knowledge friendly culture and knowledge friendly behaviour, supported by the appropriate processes, and enabled through technology. The approach applied here is to think of knowledge management in terms of three components, namely people, processes and technology. The knowledge management system architecture proposed in this paper comprises of three important elements and they are: tools and platforms, people and elements and enablers. It has been suggested that these three elements participation must be integrated in order for a knowledge management programme to succeed and that they must support each other throughout the whole process. The cultural behavioural aspect of knowledge management discussed in great length under the sub-topic, Japanese perspectives on knowledge management, is integrated into the knowledge management system architecture designed, based on the fact that knowledge management relies heavily on human intellectual effort and skills.

*Acknowledgement*

The main author would like to thank the Japan Society for the Promotion of Science for awarding the travel grant and Prof. Dr. Takeuchi and Prof. Dr. Nonaka at Hitotsubashi University, Tokyo for their valuable guidance on the Japanese cultural behavioural approach to knowledge management.

## BIBLIOGRAPHY

Barclay, R.O. & Murray, P. (2010). What is knowledge management? Knowledge Praxis. Retrieved on January 30, 2010 from <http://www.media-access.com/whatis.html>.

Hazlett, S.A., McAdam, R. and Gallagher, S. (2005). Theory building in knowledge management: in search of paradigms. *Journal of Management Inquiry*. 14 (1): 31-42.

Junnakar, B. (2010). Creating futile ground for knowledge at Mosanto. Perspectives on Business Innovation, 1:34-40. Retrieved on January 30,2010 from <http://www.businessinnovation.ey.com>)

Levy, M. (2009). WEB 2.0 implications on knowledge management. *Journal of Knowledge Management*. 13 (1): 120-34.

Malhotra,Y. (2004). Why knowledge management systems fail? Enablers and constraints of knowledge management in human enterprises. In Michael E.D.Koenig & T. Kanti Srikantiah (Eds.), *Knowledge Management Lessons Learned: What works and what doesn't*. Information Today Inc. (American Society for Information Science and Technology Monograph Series), 87-112.

National Electronic Library for Health. (2001). KM principles and practices. Retrieved on 12 March 2004 from [http://www.nelh.nhs.uk/knowledge\\_management/km1/principles.asp](http://www.nelh.nhs.uk/knowledge_management/km1/principles.asp).

Ngeow, M. (2003). *Knowledge-the missing link*. Business Enabling Technologies.

Polanyi, M. (1966). *The tacit dimension*. London: Routledge and Kegan Paul.

Pluskowski, B. (2002). Dynamic knowledge system. Imaginatik Research. White paper 0602-1.

Sveiby, Karl-Erik. (2001). What is knowledge management? Retrieved on 1<sup>st</sup> March 2001 from [http://www.sveiby.com/articles/Japanese\\_knowledge\\_management.htm](http://www.sveiby.com/articles/Japanese_knowledge_management.htm)

Takeuchi, H. (1998). Beyond knowledge management: lessons from Japan. Retrieved on 3 May 2004 from <http://www.sveiby.com/articles/LessonsJapan.html>.

Takeuchi, H. & Nonaka, I. (2004). *Hitotsubashi on knowledge management*. Singapore: John Wiley.

Taylor, F.W. (2005). The scientific management era. Retrieved on 1<sup>st</sup> March 2005 from <http://faculty.ncwc.edu/toconner/417/417lect03.html>.

Weinberger, D. (2007). The real difference between the two 2.0s", KM World, 16 (2). Retrieved on 28 December 2010 from [www.kmworld.com/Articles/Column/David-Weinberger/The-real-difference-between-the-two-2.0s-19130.aspx](http://www.kmworld.com/Articles/Column/David-Weinberger/The-real-difference-between-the-two-2.0s-19130.aspx).