Winter 12-9-2003

Impact of Knowledge Management on the Value Addition Process of the Enterprises

Jahangir Alam

Mohammad Aminul Karim

Mohammed Jamal Uddin

Impact of Knowledge Management on the Value Addition Process of the Enterprises

Jahangir Alam
Associate Professor
Department of Finance
University of Chittagong
Chittagong, Bangladesh.
Phone: 880-031-726311 –14 Ext. 4234 (Off.), 880-031-684543 (Res.)
Email:jahangira@hotmail.com

Mohammad Aminul Karim
Lecturer
Department of Finance
University of Chittagong
Chittagong, Bangladesh.
Phone: 880-031-726311 –14 Ext. 4234 (Off.), 880-031-717311 (Res.)
Email:aminulkarim@yahoo.com

Mohammed Jamal Uddin
Lecturer
Department of Finance
University of Chittagong
Chittagong, Bangladesh.
Phone: 880-031-726311 –14 Ext. 4234 (Off.), 880-031-656251 (Res.)
Email: jml@spctnet.com

Abstract

The concept of knowledge management (KM) is relatively a new one. But this concept has been widely discussed these days as it has been recognized that knowledge management is one of the important components of intangible assets of any business or non-business organization. In the business world, the earlier concept of knowledge has been changed where data, information etc. were treated as knowledge. Knowledge is now treated not as some data or information but this is power – a strategic (created) asset. Firms around the world are looking mainly for strategic assets rather than tangible resources. As a result, management of such an asset has become a challenge to the present world. There are controversies also exist across countries because of the fact that it is not objectively verifiable whether knowledge management adds value to the organization.

This paper attempts to conceptualize knowledge, its different types and the notion of knowledge management. This has been mainly done by the survey of literature on the basis of research work carried out around the world. However the main contribution of this article is that it has taken the Porter's Value Chain Model (1985) to evaluate if there is any relationship between this model and knowledge management or whether knowledge management adds value to the organization or not. A null hypothesis has been drawn assuming that there is no relationship between them. It has been found that the null hypothesis is not true and hence rejected. This indicates that KM adds value – the acceptance of alternative hypothesis (H_1).

1. Prologue

In the present day business world, organizations are constantly striving to create mechanisms for gaining competitive advantage over their competitors by differentiating their products or services in a common market place. In this context, business enterprises are trying to optimize the exploitation of corporate assets. These assets can be categorized as financial, tangible and intangible assets. Financial assets comprise of cash, stocks, bonds etc.; plant, equipment, inventory etc. can be considered as tangible assets whereas core competencies & technologies, management skills, organizational culture, brand image, consumer loyalty, patents, distribution channels and the like are intangible assets. Knowledge is treated as a valuable intangible asset, which can be used as a strategic weapon in this turbulent environment of global economy. Such intangible assets are often called "Knowledge Capital" or "Intellectual capital" (Stewart, 1994) [20].

Knowledge Management is the systematic process for acquisition, distribution and utilization of knowledge in order to achieve the knowledge goals of the organization. It is the management of business, customer and process knowledge and its application for adding value and competitively differentiating product and service offerings [21]. As information technology revolutionizes today's businesses, flow of information is increasing through the technologies such as Internet and Intranets. Business processes and activities becoming more transparent and information asymmetries are blurring. Organizations are depending more and more on knowledge management to be competitive.

The Value Chain Model (Porter, 1985) [14] views the firm as a chain of some basic activities. Value addition refers to the difference between the products or service value before and after an activity is performed. All of these value chain activities are significantly adding value to a firm. This paper investigates the link between knowledge management and value addition to the enterprises through value chain activities in contemporary business world. An attempt is made to find whether knowledge management has any significant impact on the value chain activities of the firm so that it gives an advantage over competitors to business organizations. In this paper, A function is developed describing the relationship between value addition to the enterprises and

impact of knowledge management on value chain activities of the enterprises. A hypothesis is drawn about the impact of knowledge management on the value addition to value chain activities i.e. value addition to the firm. The impact of knowledge management on each of the value chain activities is logically tested without empirical analysis. An inference is drawn on the relationship between knowledge management and value addition process of the enterprises.

2. Conceptualizing knowledge and knowledge management

Knowledge is the whole body of cognition and skills which individuals use to solve problems. Knowledge can be defined as the sets of propositions that we are certain to be true. This certainty comes from the rules, standards and procedures that are embedded in and define natural, social and cultural sciences. Knowledge is based on data and information but it incorporates individual judgments that are influenced with experience, creativity and various social and cultural factors.

Understanding the concept of knowledge requires clearing the definition of data and information. Data represents raw facts that are out of context. Facts can be numbers, characters, character strings, text, images, voice, video and any other form in which a fact may be represented [2]. Information is data with a meaning, purpose and relevance. Mere information is not knowledge. Although knowledge is based on data and information, but unlike these, it is always bound to persons [17.p.24]. Understanding the underlying principles transforms knowledge into wisdom. The following figure might help to understand the concept of data, information, knowledge and wisdom.

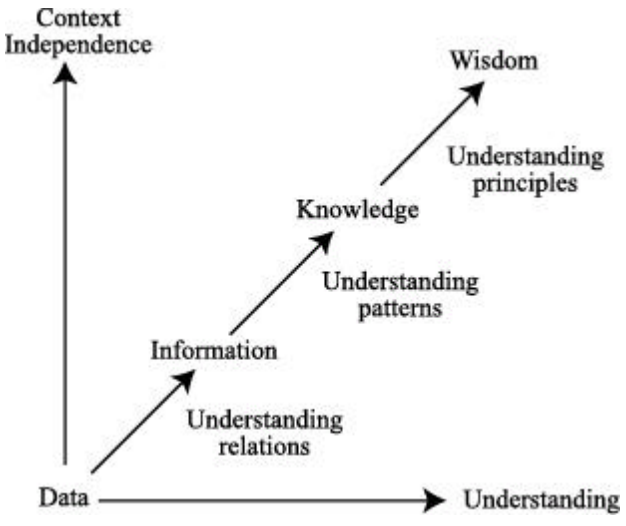

Figure 1: Showing the relationship among data, information, knowledge and wisdom. [5]

Above figure shows that Merely the collection of data does not provide us any benefit until the relationship with the purpose is understood which lead us to information. When the pattern of this relationship is understood, it can be called knowledge. So knowledge is actionable information for intelligent decision-making. As we move from data to wisdom, context independency increases and better understanding is achieved.

Organizational knowledge resides in the organizational environment and information systems, which can be collected from databases, web sites, employees, business partners, strategic alliances etc. Such knowledge becomes not only embedded in documents or repositories but also in organizational routines, processes, practices and norms [21.p.35]. Utilizing these knowledge helps organizations survive and thrive in the volatile business environment.

Knowledge can be divided into two major types - Explicit or codified and Implicit or Tacit knowledge [15][16]. Explicit knowledge can be expressed in words and numbers and shared in the form of data, specifications and the like. Explicit knowledge can be shared using Information & Communication Technology (ICT) like Internet, Intranets etc. Lubit (2001) [8] observes that the explicit knowledge is codified and stored in the "Organizational memory" and is available to employees throughout the structure. Documents, reports, databases, web pages, e-mails, charts, etc. holds this type of knowledge. Present information systems can easily support explicit knowledge.

On the other hand, tacit knowledge is highly personal and difficult to formalize, making it difficult to communicate or share with others. It exists in the mind of employees and deepens with attention, motivation, commitment, creativity and innovation over time. So, tacit knowledge is hard to manage (record, encode or articulate) using existing information systems. It is often deeply embedded in corporate culture and influenced by norms and values. It is unique to organizations and considered as the most valuable corporate asset. Because of formalization difficulty, inter and intra organizational transfer of tacit knowledge is very hard. In this volatile business world where globalization and digitization creates information symmetry, no organization can achieve sustainable core competencies that may act as competitive advantage for long. Tacit knowledge can make the difference among organizations because only 'knowing, how they are doing' may not blur the advantage that one has. It can be compared with swimming. A swimming instructor may help one to learn how to swim using email, manuals or even with photographs or videos, but the trainee will not be able to swim until he is in the water with the instructor. Tacit knowledge is hard to copy. That's why it is considered the most valuable asset for competitive advantage in this "knowledge era" of business.

Knowledge management is the set of systematic and disciplined actions that an organization can take to obtain the greatest value from the knowledge available to it [10]. It is a strategic weapon for gaining competitive advantage. Knowledge capital is composed of three elements; human capital, customer capital and structural capital (Saint-Onge, 1998) [18]. Human capital is defined by Saint-Onge as "the capabilities of the individuals in an organization that are required to provide solutions to customers". Structural capital is defined as "The organizational capabilities of the organization necessary to meet market requirements" and customer capital is defined as "The depth (Penetration), width (coverage) and profitability of the organizations franchise". According to Peter A. C. Smith (1998), human capital comprises transient knowledge and capabilities in the sense that they are free to walk out of the organizational door at close of business day [19]. Structural capital comprises the captured knowledge and capabilities that remain behind. So we can summarize that, knowledge management is the management of organizations human capital, structural capital and customer capital to develop the core competencies of the organization.

The major objective of the KM in the organization is to use knowledge as the productivity and efficiency enhancement strategic weapon to gain competitive advantage in the industry. Probst (2001) [12] considers it as a cyclical process, which consists some functional blocks.

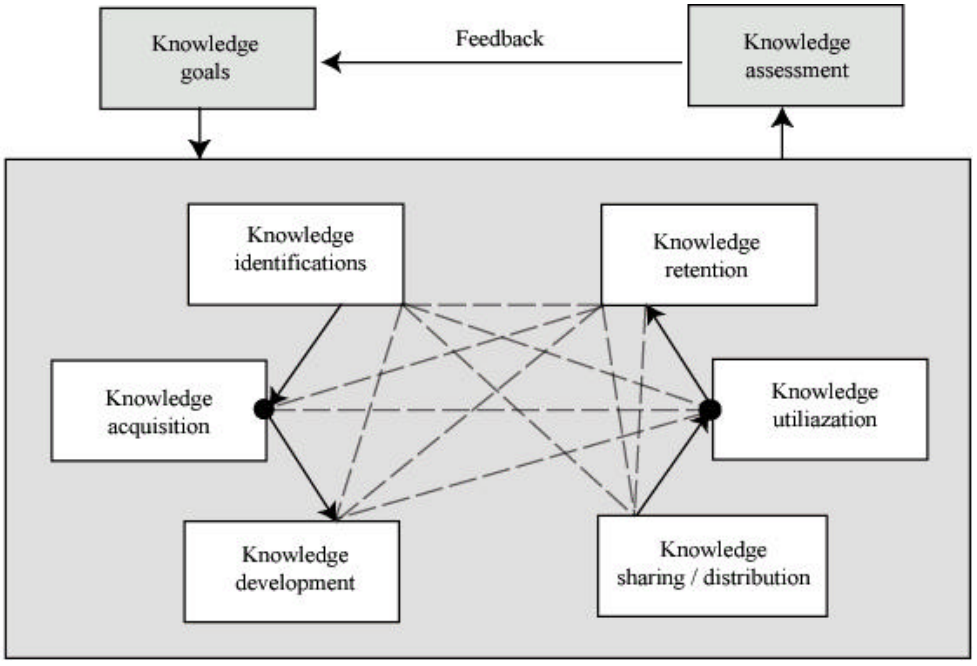

Figure 2: Building blocks of knowledge management. [17.p.34]

Explaining the above figure, it seems that knowledge goals define what skills are to be developed in the firm and at what levels. There are three levels in developing knowledge goals – Normative, Strategic and Operational [17 p.33]. Normative knowledge goals help in developing a culture of knowledge sharing and development. Strategic knowledge goals look at the core of the company and identify the skill that we will need to achieve the objectives. Operational knowledge goals help to implement the above two knowledge goals. Knowledge identification helps the company to define knowledge gap in and outside of the organization. Knowledge acquisition process includes hiring of experts, knowledge gain from stakeholders, setting up cooperation to gain access to other knowledge bases, acquisitions, acquiring knowledge products, knowledge links. Knowledge development includes all those management efforts through which the organization consciously strives to acquire competencies that it does not have or to create that do not exist either inside or outside the organization. It focuses on the development of new skills, better ideas and more efficient processes [17 p.130,156].

Knowledge sharing and distribution is the most important building blocks of knowledge management. According to Nonaka "The key to knowledge creation lies in the mobilization and conversion of tacit knowledge" [13]. The theory of organizational learning by Nonaka focuses on the conversion of knowledge between tacit and explicit form. He considers four techniques for conversion of knowledge: Socialization, externalization, internalization and combination (figure3). Organizational learning takes place as individuals participate in these processes, since by doing so their knowledge is shared, articulated and made available to others.

All Building blocks of knowledge management should be directed towards the utilization of all organizational knowledge because without proper utilization, goals of knowledge management could not be achieved. This knowledge has to be preserved in an easily accessible format as much as it is possible. Knowledge measurement involves checking of all parts of knowledge strategy and whether they have succeeded in implementing these at the operational level.

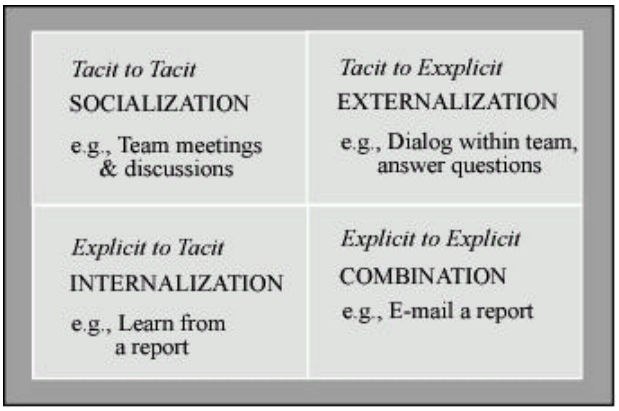

Figure 3: Conversion of knowledge between tacit and explicit form after Nonaka. [10].

In this process, assessment of knowledge outcomes provides constant feedback to knowledge goals of the organization. This feedback may refine the knowledge goals if necessary. In the "New World of business" with high levels of discontinuity and inability to predict the future, highly routine and structured forms of knowledge management should incorporate behavioral dimensions of human decision-making process to harvest the fruitful outcome of it.

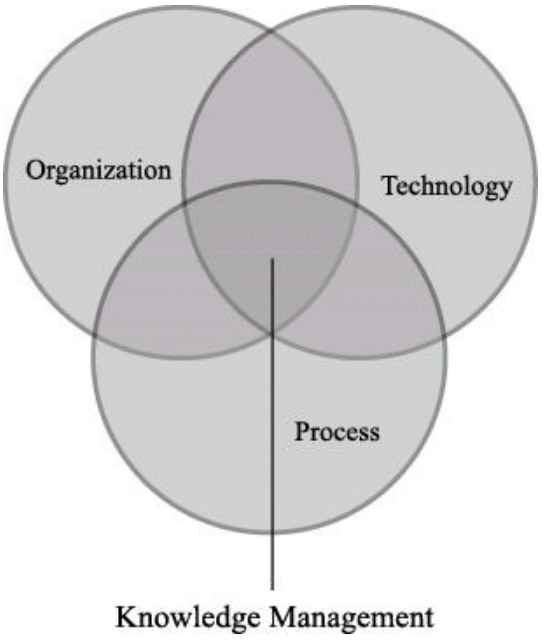

Figure 4: Knowledge management solutions. [6].

Knowledge management solutions (figure 4) consider three key issues for successful implementation. These are Organization, Process and Technology. Within organization, knowledge needs, sources, organizational structure, culture and its barriers are considered. Business process includes product and service design and development, customer management, human resources management, business planning and forecasting. Technology addresses the computing and communication technology for knowledge sharing, distribution and retention. Effective knowledge management solution is achieved where these three issues are properly melted.

3. The Value Chain Model

In the Value Chain Model, Porter (1985) [14] describes businesses as a chain of some activities where competitive strategies can be applied best. These activities are categorized into two types; primary activities and support activities. Primary activities are directly related to the production and distribution of the firm's products or services that create value for the customer. According to the value chain model, there are five primary activities; inbound logistics, operations, outbound logistics, marketing & sales and service. Inbound logistics are those activities that are required to receive and store raw materials for distribution to production system. Operations transform raw materials into finished products or services. Outbound logistics involve all processes of replenishing retailer inventory. Marketing and sales includes product promotion, market creation and expansion and selling activities of products and services. Maintenance and repair of the firm's products are the service activities.

Support activities are necessary for successful completion of primary activities. These activities include firm's infrastructure related activities, human resources management, technology related activities and procurement. Firm's infrastructure related activities are administration and management of the organization, human resources management activities are employee recruiting, hiring, training etc. Technology activities are related with improvement of products and processes. Procurement is about gathering the inputs.

Value addition refers to the difference between the products or services value before and after an activity is accomplished. Value addition can take place either by reducing the cost of any activity than competitors through better management, superior design or process or by increasing the revenue through product differentiation or other means. These nine strategically relevant activities adds margins of value to a firms products or services, which may gain competitive advantage to the firm.

4. Impact of knowledge management on value addition: A hypothesis

We can formulate the following hypothetical function where value addition to the enterprises depends on the value addition through knowledge management in the value chain activities.

$$Va = f(KMi) + g(KMj) \quad (1)$$

Where,

Va=Value addition to the enterprise.

KM_i =Value addition through KM in i^{th} primary activity.

KM_j=Value addition through KM in j^{th} support activity

i = IB, OP, OB, MS, SV; the primary activities of value chain: inbound logistics, operations, outbound logistics, marketing & sales and service respectively.

J = AD, HR, TH, PR; the support activities of value chain: administration & management, human resources, technology and procurement respectively.

Value addition through knowledge management will happen as long as

$$\frac{\partial f}{\partial KM_i} > 0 \text{ and } \frac{\partial f}{\partial KM_j} > 0 \qquad (2)$$

i.e. The marginal value addition through knowledge management in each of the value chain activities is greater than zero.

So we can draw the following null hypothesis,

Ho: There is no difference in the value of the enterprise before and after KM is incorporated in the value chain activities.

motivation, commitment, creativity etc. Incorporating behavioral issues in knowledge management is necessary because without it KM generates mostly static outcome, which may be sufficient for businesses in continuously changing environment but not for 'new world of business' of discontinuous changing environment which requires dynamic adjustments in decision making. As quoted by Malhotra (1998), "Essentially, it (KM) embodies organizational processes that seek synergistic combination of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings" [9]. According to this model, 'the world of re-everything', which challenges the assumptions underlying the "accepted way of doing things". …..This world is contrasted from the 'old world' by its emphasize on "doing the right thing" rather than "doing things right" [1.p.11].

Inbound logistics and procurement activities are related to the purchase, storage and distribution of necessary materials and inputs for production. Since we are in a demand-based economy, consumers determine what product will be produced and delivered to them. So inbound logistics and procurement activities are driven by market needs. For gaining competitive advantage by reducing cost businesses are managing inventory using systems like 'stockless inventory' or 'just in time'

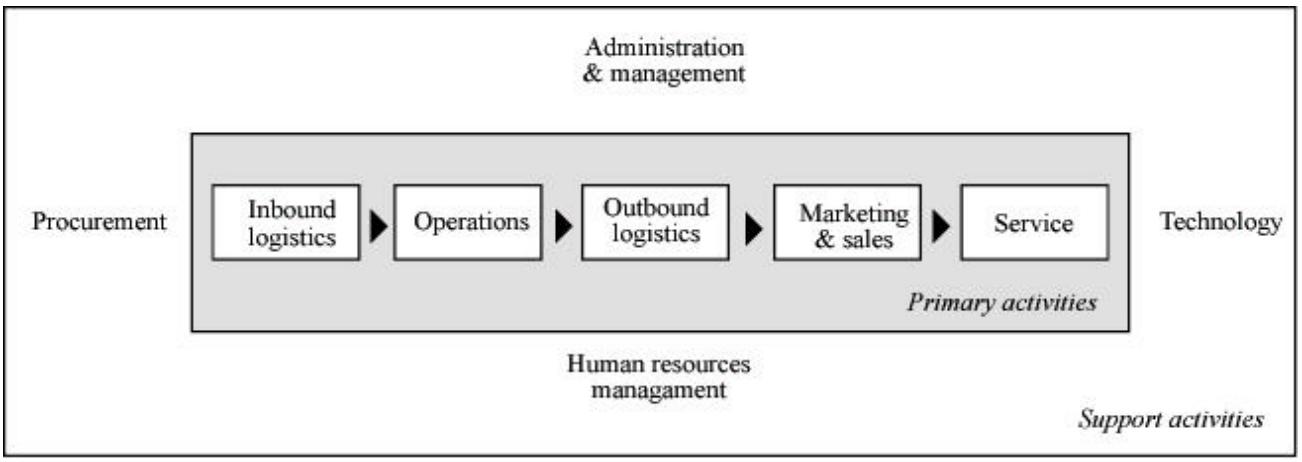

Figure 5: The Value Chain Model

5. Hypothetical analysis

In order to test the hypothesis, we will consider each value chain activities and try to find whether knowledge management has any impact to enhance the quality of the value chain activities so that it can add more value to the firm's products or services. This hypothesis is tested non-empirically using literatures and evidences.

To aid the testing of hypothesis, we can use the model of knowledge management of 'new world of business' [1.p.12]. In this model it is shown that, knowledge factors have shifted from highly routine structural forms to partly unpredictable behavioral factors like attention,

systems. This type of systems require synchronized flow of information along with proper knowledge sharing about the market nature and demand between supplier and manufacturer. As an example, Wal-Mart's (One of the largest retailer in the USA) 'Continuous stock replenishment system' sends orders for new merchandise directly to suppliers as soon as customers pay for their purchases in front of a point of sales (POS) terminal [7. p.54]. Another KM aided inventory management technique is vendor-managed inventory where supplier is responsible to make inventory replenishment decisions based on information supplied by sales transaction in POS terminals or any other means. It is based on the theory that, suppliers are the product or category experts and thus can do the best job of making sure that supply meets demand [7. p.59]. This expertise comes from the intimate knowledge sharing between supplier and

Summarizing the old version and new version of knowledge management models of Malhotra (2002), the following model for effective knowledge management can be drawn.

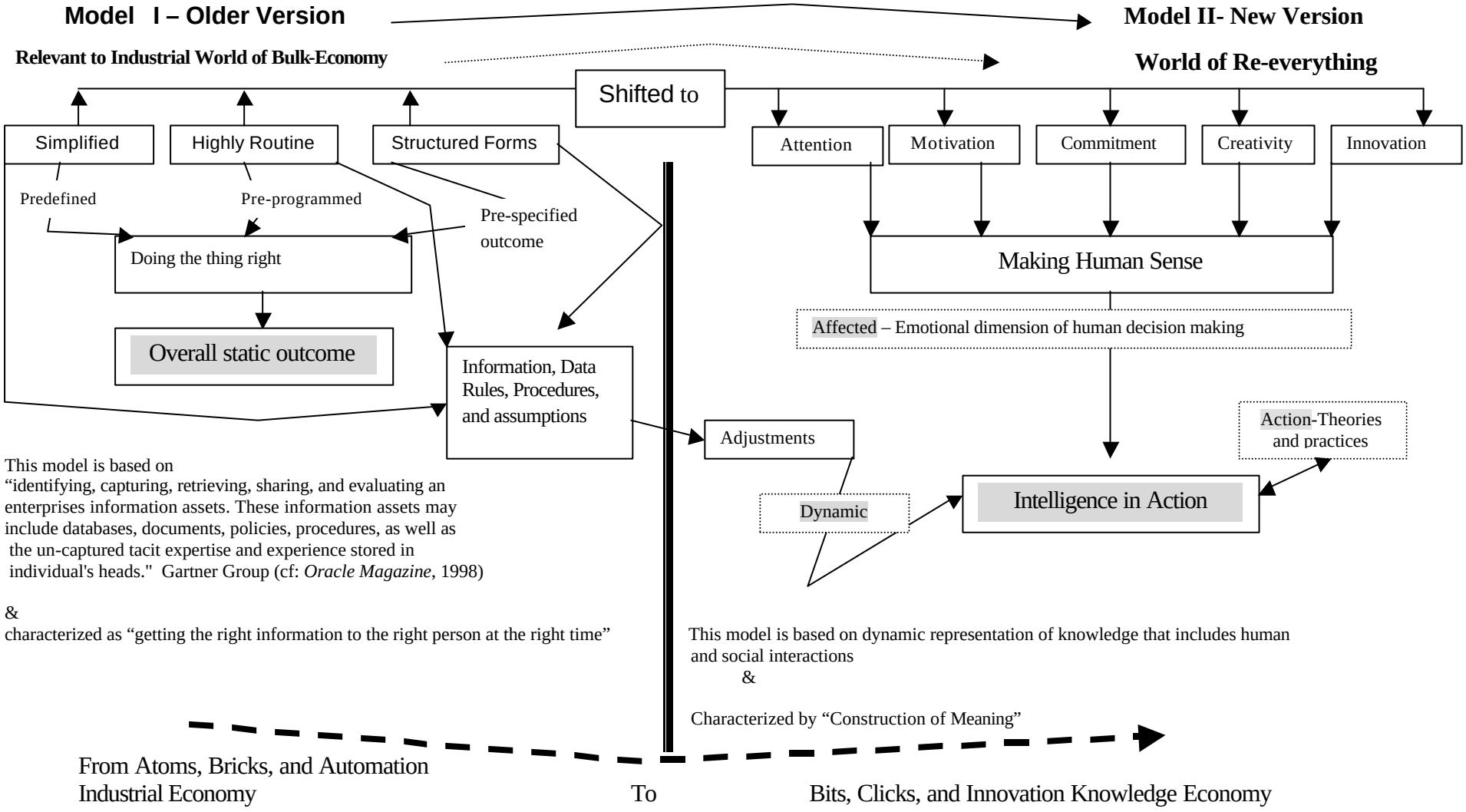

Fig. 6 – Shows the shifted model of knowledge management.[1. p.12]

manufacturer through successful knowledge management system. But the mere information does not add any value until this information is properly understood and the behavioral factors of knowledge management are incorporated for intelligent action. According to Yogesh Malhotra, founding chairman and chief knowledge officer for the BRINT Institute in Syracuse, New York, "Inert and static information lying in any kind of repositories including intranets and portals alone does not result in business performance. Even within stable business environments, users' commitment and motivation to effectively use that information is critical " [23].

Procurement information is very easily and cheaply available in this cyber business world. Large amount of information can be collected within a very short period of time very cheaply. Finding the right information for the business is a cumbersome and time consuming process. Content management can play a vital role to rescue us from the world of 'info-glut'. Content management is a primary component of knowledge management and a major issue for organizations because it brings to light the need to retire content when it becomes outdated and to hold someone accountable for maintaining accurate and up to date information. [22]. Knowledge management technology like Natural Language Processing (NLP) portals can generate meta-data (knowledge map or taxonomy; a hierarchically organized set of categories. exp. Yahoo!) of a particular domain. This type of technology may help in finding the appropriate and accurate explicit knowledge for procurement and inbound logistics. In the push process of raw material procurement cycle, inventory is replenished in anticipation of customer demand. This anticipation requires understanding and experiences about human behavioral pattern (tacit form of knowledge) along with proper information.

Operations are the activities performed to transform inputs into finished goods and technology is the aiding tool for improving products and production processes. Computer aided product design is a technology based new product creation performed by the knowledge workers of the organization. Products are getting more and more complex by adding more features due to competition. It is knowledge workers responsibility to add more value to them. According to Peter F. Drucker, "Productivity of the knowledge worker is not – at least not primarily – a matter of the quantity of output. ……quality is the essence of output." [3. P.142-143]. To do the task of adding quality, Drucker thinks, continuous innovation, continuous learning and continuous teaching have to be built into the knowledge worker's job [3 p.146]. Embedding knowledge in products, services and processes helps deliver higher quality individualized offerings that can lock in customers [21 P.41].

As quality adds more value to products or services, knowledge creation through innovation and creativity and knowledge sharing among knowledge workers can create new products or services with better quality and can demand better payoff than competitors. So knowledge workers are the unique assets of the organization. "To be productive knowledge workers must be considered as capital assets", Drucker says [3. p.148]. As an Example, The Gillette Company, the famous grooming and oral care product manufacturer, produces value to the firm by raising quality of Gillette razors and blades. They are producing new types of products like Sensor Excel, Mach3 by adding new features and differentiating their products in the market place for competitive advantage. [7. p.42].

Knowledge creation can also enhance the production process, which adds value to products or services. Intel Corporation switched to new 130 nm technology from older 180 nm technology of producing processors to produce more cooler and speedier desktop processors than its competitor Advanced Micro Devices (AMD). But after a short delay AMD quickly followed Intel to blur that advantage.

Modular innovation (innovation and breakthroughs that are achieved by recombining and reconfiguring existing technologies in novel ways) [21. p.10] and knowledge-based individualization facilitated by KM, may create value and group of loyal customers. MP3 players and Levis custom fitted jeans can be two examples of these two techniques. Knowledge is a unique asset to organization but sometimes confinement of knowledge within the organization might not be profitable for the organization as well for the industry. Example can be taken from two knowledge intensive industries – PC and biotechnology industry- that emerged in the 1980s. The PC industry blossomed by giving away its secrets, with the singular exception of Apple, which guarded its designs only to lose out. The biotechnology firms on the other hand still exist, but unlike the multi billion-dollar PC industry, most of these companies have never turned a profit despite all their patents and legal forms of protection. The only way to protect your business knowledge is to apply, reuse, update, evolve and outdate it too fast for competition to be able to copy it. [21. p.8]. So knowledge management is important for value creation.

Outbound logistics are activities related to storage and distribution of finished products. Knowledge about customers buying patterns and buying characteristics can reduce the necessity of bulk storage. Necessary information might be collected from various repositories such as data warehouses and incorporating supply chain managers experiences with this information, business organizations can produce in depth knowledge about storage requirements and distribution patterns of the goods and services. Airlines yield management system can be a good example of management of explicit knowledge to gain competitive advantage. Yield management is the process of wringing the most profit out of every airline seat and determining when to drop or

increase prices to offer promotions. Rather than offer cut rate fares to fill up the plane, this system examines the historical pattern of that flight and determines how many seats the airline should set aside for executives willing to pay full fares at the last moment. [7. p.55]. 'Cross functional platform teams' combine expertise of different functional area such as product design and development, manufacturing, distribution, marketing and sales etc. Combination of cross-functional tacit and explicit knowledge can enhance the outbound logistics of the organization. Malhotra says that the synergy of 'Smart minds' and 'Smart technologies ' also provides a basis for defining agile and adaptable supply chain networks that can withstand the challenges of a radically changing business environment. [22].

As we have stated earlier, human capital is an important element of knowledge management. It is the capability of human resources of the organization to solve problems. Same problems can be solved by different organizations differently. "No two executives organize the same information the same way" [3. p.126]. In order to add value through problem solving and meet customer needs, executives should incorporate innovation, creativity, motivation and experiences with the available information. Since much of the administrative and managerial activities require tacit type of knowledge, it is difficult to provide any hard and fast procedures for solving this kind of problems. Drucker says, "Innovation should be organized as a regular part of every unit within the enterprise and every level of management ……. the test of an innovation is that it creates value " [3. p.85-86].

Through interactions with others, tacit knowledge is externalized and shared. [12]. Socialization (team meetings, informal discussions) and externalization (FAQs) help tacit knowledge to be shared around the organization. Shared knowledge can create collaborative expertise which can help to solve problems more accurately and efficiently using less time which can create economic value to organizations.

As we are moving from product to service oriented industry, leveraging knowledge is more important than ever for adding value to organizations. Firms require employees with experiences and in depth knowledge to survive and thrive. Human resources management activities (training. recruitment, hiring etc.) could be facilitated by horizontal knowledge transfer techniques such as twinning (organizing social or other visits) and secondments (temporarily transfer to other jobs from their responsibility). So incorporation of knowledge management techniques in human resources management activities could increase organizational efficiency and hence value to the firm.

Marketing activities create the awareness about the product or services of the firm. Identifying the customer needs and supplying necessary utility is the major task of marketing. Traditional marketing activities research, strategy, planning, collateral development, lead generation are all done in vain if marketing can't effectively identify the organization's current and future customers, segment them, forecast accurately against those segments and inform the product development process so that the right product mix arrives in the marketplace at the right time for the right customer groups [4]. Click stream analysis (analyzing a series of mouse clicks of an individual in cyberspace to understand the buying patter) can help to identify a potential customer. Knowledge enabled businesses can anticipate changes in customer preferences – an evolving social trend, a new management practice, a nascent technology rival innovations or economic development in a potential foreign market. KM tracks and maintains knowledge regarding the validity of assumptions about markets, customers, and business environments before critical decisions are made based on flawed ones [21. p.41.]. Knowledge enabled customer relationship management (KCRM) manages customer knowledge to generate value creating lock-ins and channel knowledge to strengthen relationships and collaborative effectiveness. [21. p.12]. KCRM treats customer as a value co-creator. Customer knowledge integration can create loyal customers who are willing to pay justifiable cost but not the least cost. As an example, 70 percent of *Amazon.com* customers return to pay more when many of them know of other places on the web where they can find same item for less [21. p.13]. Sales function records the transaction information, which can be fed to knowledge-based marketing system for producing better quality products and loyal customers. In this highly competitive business arena where switching cost is very low, knowledge-enabled marketing and sales activates can add value to the enterprises.

Service activities can generate huge amount of information through complaint reporting and resolutions. Service activities can add value by improving the quality of the products as this information can be used to develop better products and services. Software industry is using this type of approach. Service employee's experience can be a unique asset for the organization. A classic example of knowledge enabled service system is Xerox Corporation's Eureka system.

Eureka system enables the organization's 23,000 service engineers from around the globe to input product solutions into a knowledge base. When a machine problem arises with a Xerox product, the service engineer can access the knowledge base to find a product solution. The knowledge base currently holds 55,000 problem/ solution entries. If it's a unique situation where a solution doesn't exist in the knowledge base, the service engineer will voluntarily input the solution into the system once the machine problem is solved. Xerox estimates savings between $12 million and $15 million per year as a result of its Eureka system. Much of the motivation lies behind having his or her name attached to the solution and becoming an author, and then having that solution tip validated by a senior manager.[22].

From the above example it is evident that, a knowledge base of service problems and resolutions can help firms to provide better and prompt service and it also converts the tacit knowledge into explicit form, which reduces the fear of non-existence of that expertise as the employee leaves the organization.

From the above discussions, we see that, knowledge management can significantly enhance the value chain activities: both primary and support activities. Enhancement in each of these activities adds margins of value to the enterprises in this volatile business environment. Using knowledge management techniques, enterprises can have unique advantages over competitors. So we can reject the null hypothesis and accept the alternative hypothesis i.e. knowledge management in value chain activities has positive impact on the value addition to the enterprises.

6. Conclusion

In this paper we have seen the differences between information and knowledge. We have also seen the creation and management process of knowledge along with its different dimensions and types. There has been a gap in understanding whether knowledge adds value to the firms or not. To evaluate this proposition, we have taken the Porter's Value Chain Model. In the model, there are two types of activities –primary and support. As we did not have numerical figures to test it mathematically, we have tested the proposition on the basis of different research works, our best judgments and different examples cited by various authors. To formulize it, we have drawn a function taking one dependent and some independent variables. At the end, it has been found that there is a relationship between value addition and knowledge management, that is, knowledge management adds value to the firms. We expect that potential researchers will statistically and mathematically prove the hypothesis in coming days.

References

[1] Alam, J. *Franchising network in creation, dissemination and management of knowledge*, www.univie.ac.at/EMNET, June 2003.

[2] Brackett M.H. *Business intelligence value chain*, DMReview.com, March, 1999.

[3] Drucker, P.F. *Management challenges for the twenty first century*, Butterworth-Heinemann, 1999.

[4] Fenton, D. *Achieving superior delivery chain management: the role of data warehouse in building customer knowledge*, DMReview.com, February 1999.

[5] Fleming, N. *Coping with a Revolution: Will the Internet Change Learning?*, Lincoln University, Canterbury, New Zealand, http://www.outsights.com/systems/kmgmt/kmgmt.htm#fle96, 1996.

[6] Honeycutt J. *Knowledge management strategies*, Prentice Hall of India, 2001.

[7] Laudon K.C. & Laudon J.P. *Management information System – organization and technology*, Fourth edition, Prentice Hall of India, 2000.

[8] Lubit, R. *Tacit knowledge and knowledge management: The keys to sustainable competitive advantage*, Organizational Dynamics, 29 (3), 164-178, 2001.

[9] Malhotra, Y. *Knowledge Management, Knowledge Organizations & Knowledge Workers: A View from the Front Lines*, Maeil Business Newspaper of February 19, 1998, Korea.

[10] Marwick A.D. *Knowledge management technology*, IBM Systems Journal, Vol. 40, NO. 4, 2001.

[11] Nonaka I. *The Knowledge Creating Company*, Harvard Business Review 69, 96–104, November–December 1991.

[12] Nonaka I. & Konno N., *The Concept of 'Ba': Building a Foundation for Knowledge Creation*, California Management Review 40, No. 3, 40–54, 1998.

[13] Nonaka I.& Takeuchi H. *The Knowledge Creating Company*, Oxford University Press, Oxford, UK, 1995.

[14] Porter, M. *Competitive advantage*, New York: Free Press, 1985.

[15] Polanyi M., *The Tacit Dimension*, Routledge & Kegan Paul, London 1996.

[16] Polanyi M., *"The Tacit Dimension," Knowledge in Organizations*, Prusak L., Editor, Butterworth-Heinemann, Woburn, MA, 1997.

[17] Probst, G., Raub, S. & Romhardt, K. *Managing knowledge building blocks for success*, 2001

[18] Saint –Onge, H. *How knowledge management adds critical value to distribution channel management*, Journal of systematic knowledge management, January 1998.

[19] Smith A.C.P. *Systematic knowledge management: managing organizational assets for competitive advantage*, Journal of Systematic Knowledge Management, April 1998.

[20] Stewart, T.A., *Your Company's Most Valuable Asset; Intellectual Capital*. Fortune, October 3, 1994.

[21] Tiwana, A. *The essential guide to knowledge management – E-business and CRM applications*, Pearson Education Asia, 2001.

[22] Yova, J. *Knowledge management: the supply chain nerve center*, Inside Supply Management, July 2002.

[23] www.brint.com/km