



## CONCEPTUALISING KNOWLEDGE MANAGEMENT

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### **Abstract:**

Contemporary economy is characterized by globalization and knowledge-intensive production. Organizations recognize that there is a shift from the old, industrial based economy to a new knowledge-centric economy. In order to maximize the organizational profits and to gain competitive advantage they should use their knowledge base, in addition to various tangible assets, in an effective way which is often embodied as technologies. A Firm's knowledge base, the experts contend lies in its internal capabilities and know-how that facilitate delivery of products and services to customers as well as enhance organizational performance. In order to increase the productivity of the company, more knowledge workers are to be employed. This transformation, the experts affirm is the biggest contribution of managements in the twenty-first century. Hence, the knowledge worker is the primary factor of production in a knowledge driven economy and this makes knowledge management (KM) vital to organizations.

**Key Words:** Knowledge Intensive Production, Shift from Industry Based Economy to Knowledge, Centric Economy, Contribution of the Twenty-First Century Managements, Knowledge Driven Economy and Knowledge Management

The basis of wealth in a knowledge economy is services. One of the critical success factors for the General Electric's outstanding performance during Jack Welch's era had been the transformation of the company to a service provider (Welch 2001). Services' primary factor of production is knowledge and hence the term "knowledge intensive services" (Crawford 1991, 114). Knowledge related services are offered by industries connected with health care, education, biotechnology, entertainment, and telecommunication to name a few. Even traditional industries such as automobile manufacturers realize that their competitive advantage is also driven by knowledge.

Corporations not only recognize knowledge as the critical resource, but they also try to manage organizational knowledge more intensely and effectively. However, there are many issues influencing these activities, such as 1) how knowledge content translates into "historically dependent" capitals (Barney, 1996, 1997, 2002); 2) who are the users that involve knowledge creation processes and commit to using, assimilating, internalizing, externalizing the knowledge (Nonaka, 1994, 2002); and 3) what should be further developed for sustaining a firm's competitive advantage.

In today's business environment, the maxim that "knowledge is power" has greater significance than ever before. As the global economy evolves towards being more information-intensive, a firm's knowledge-based assets are becoming more fundamental to its successful operation – that is, what a firm "knows" is often more important than what it "owns".

This transformation represents a paradigm shift towards an information based economy, heralding the arrival of the so-called "Information Age". Actions, however, speak louder than words: the truest indicators of this trend can be found in the activities of today's leading businesses. Companies are devoting increased attention to intellectual property rights and mining value from their portfolio of patents, copyrights, and trade secrets. Realizing the value of their corporate knowledge, firms continue to develop new tools, capabilities, and functional groups for managing knowledge within the firm. In knowledge-intensive industries such as biotechnology and pharmaceuticals, companies are ploughing back larger portions of their revenues into R&D, in the search for tomorrow's profit-generating intellectual assets'. And corporate managers continue to search for ways to attract and retain the "best and the brightest" to foster innovation to fuel new product development and to effectively manage the proliferation of information which lead to knowledge cumulatively.

### **Knowledge Economy:**

The question that looms large before us today is, where and what are we? Peter Drucker has an answer to it, "we are entering the knowledge society in which the basic economic resource is no longer capital or natural resources or labour but is and will be knowledge". The twenty first century is a century of knowledge economy. Prior to knowledge economy the world was on industrialized production economy in which the wealth production factors were physical assets such as land labour money machines etc. The use of knowledge as a production factor was quite small. In the Knowledge economy, however knowledge or intellectual capital as economy wealth production factors takes precedence compared to physical assets. Charles Gold finger sees knowledge economy from three dimensions, namely (1) the demand is for intangible artifacts (2) the supply side or production factors are dominated by intangible assets (3) the emergence of new rules of business

organization namely competition and valuation. The business landscape has changed tremendously. Business economy at present is about investments in information, internet, e-commerce, software, brands, patents, globalization, research, worldwide network, which are all Knowledge based, IC and intangible assets rather than physical assets. The transformation from production economy to knowledge economy is apparent even in non-high tech companies because they have started to embrace and use k-economy production factors in their business applications such as web site, e-commerce, branding etc., Intangible assets are fast replacing physical assets and however there is a clear complete stagnation in accounting measurement and reporting on intangible assets.

Knowledge based economy is one in which the production, distribution and use of knowledge are the main drivers of growth, wealth creation and employment across all industries among those classified as high tech and also those who are knowledge intensive. As economies get transformed into knowledge based economies the changes that become apparent are –

- ✓ A shift of economic activity into the tertiary or service sector of the economy
- ✓ An expansion of output in the high technology intensive manufacturing sector of the economy
- ✓ Increased investment in intangibles such as R&D, information, communication technologies, development of human capital and expenditure on education.
- ✓ Organizational re-structuring and re-engineering
- ✓ Up skilling of the economy –more intensive use of skilled labour in economic activities
- ✓ Growth in exports of high technology manufactures

The unique nature of knowledge in this new millennium is the speed at which new knowledge is being accumulated and the pace at which it is being transformed into a variety of new goods and services, which are being delivered at global market place. Thus, the new millennium or knowledge economy is characterized by a world in which there will be,

- ✓ Geometric growth in the information and communication technology and related connectivity
- ✓ Rapidly increased speed of technological and scientific advances
- ✓ Accelerated globalization of the market place.

Globalization, led by rapid advances in information and communication technologies, has resulted in the creation of knowledge economy - an economy that creates, disseminates and uses knowledge to enhance growth and development. Competitiveness of nations and corporations depends not just on their physical assets but also on their ability to effectively capitalize their knowledge assets. Knowledge economy is just not restricted to high-tech, information and communication technologies (ICT) industries. It is conceived as an economy that leverages the existing knowledge to improve overall productivity across industries and human development. The new knowledge economy presents the most attractive opportunity for lifting nations out of poverty by enhancing overall productivity and per capita income

#### **Knowledge Management:**

Knowledge Management as a discipline promotes an integrated approach in identifying, capturing, evaluating, retrieving and sharing enterprise information for the efficiency promotion. The number of issues such as improved technologies, the global arena, and requirement of intensely achievable competitive advantage, have enhanced the importance of knowledge management as a new area of study in the MIS literature. The concept of "Historically dependent" capital spells out the accumulation of a firm's assets or knowledge over a time that is most likely embedded in organizational routines, policies, or culture.

They are invisible, invaluable, and immobile all at the same time. In other words, the historically dependent capitals are used over time and help for task fulfillments in the firm. "Immobility," intertwined with historically dependent capitals, can be difficult or costly to move from one firm to another. It is quite interesting to note that due to importance of knowledge management and growth of information technology, intangible assets contribute more than tangible assets to shareholders value with this present scenario encouraging "knowledge economy". The dominant role of intangibles (also known as knowledge assets or intellectual capital) is evident by the increased gap between market value and book value of the company assets. Niamh (2001) compared book values and market values of 11 Irish listed companies, and his study found that market values were two to three times higher than book values.

Knowledge assets (KA) have been used to label or describe ideas, processes, technologies, culture, patents, intellectual property, skills and competencies, education, employee commitment, customer relationships, best practices, personal/professional networks, personality traits, lessons learned, methodologies, and techniques among many other elements; all of them, however, are centered around Human Capital (HC) (Beames 2003; Crawford 1991; Drucker 1999). Research findings show that (a) 92% of Chief Financial Officers indicated that HC determines significantly customer satisfaction, (b) 82% said that HC determines profitability, and (c) 72% believe that HC influences innovation; however 84% of the respondents above indicated that they do not understand what drives returns from HC investments (Mercer Human Resource Consulting and CFO Research Services 2003).

Further research finding also confirms that there is (a) a positive impact of effective HC management practices on profitability and shareholder return (Beames 2003), and (b) the cost of recruiting and training new

talent to replace lost ones is almost 50% of the worker's annual compensation (Johnson et al. 2000). The identification of intangible factors that enable HC to deliver results becomes primarily important. According to the study by Mercer Human Resources Consulting and CFO Research Services (2003) human resource investments in developing leadership capabilities and establishing a committed workforce and human resource technology are of vital importance. Traditional intangible assets (e.g., R&D, goodwill, and risk factors) are recognized in the annual accounts of organizations, but these assets are defined very narrowly (Gallego and Rodriguez, 2005). Generally, though intangible assets do not include human resources, company reputation, and information (Niamh and Brenda, 2000), yet these have significant potential to benefit the performance and development of the firm. Thus, researchers are more interested in Intellectual Capital (IC), which incorporates for its economic wellbeing both traditional intangible assets and non-traditional ones.

#### **Human Capital:**

There are two competing views of the KM concept in the academic literature. Some academic researchers use the concept to refer to the management of information tools and resources, emphasizing the role of technology. Others are paying attention to the human factors such as people's knowledge, learning ability, and the sharing of information. With these competing perspectives, the concept has remained elusive. Several notable authors have taken a narrower position by asserting that KM is the method of knowledge creation (Nonaka & Takeuchi 1995) and innovation (Leonard-Barton 1995). Leonard-Barton (1995) suggested KM is a form of organizational "learning's" that is accumulated into renewable assets to fuel an organization's innovation process. From these different claims, what can be gleaned is that significant role of humans in the Knowledge Era. The loss of employees meant the loss of years of knowledge and experience that employees accumulate. In this connection Knapp (1998) states that fundamentally, Knowledge Management is a set of processes for transferring intellectual capital to value-processes, such as innovation and knowledge creation and knowledge acquisition, organization, application, sharing, and replenishment.

Furthering this idea Bozbura, Beskese and Kahraman (2007) opine that to develop accurate measurements of human capital, "People in an organization constitute an important and essential asset which tremendously contributes to development and growth of that company by the help of their collective attitudes, skills and abilities. This is why the Human capital (HC) can be considered the most important sub-dimension of the intellectual capital, (p. 1100)"

Studies relating to human capital are divided into two broad categories, namely, general and specific, though the determination of balance between these two groups is not exact. For example, Gimeno et al. (1997) assign education and experience within the category of general Human Capital. In contrast, Pennings et al. (1998) also define general Human Capital as experience and education but relate specific human capital to the particular business, rather than the industry.

The above studies tend to focus upon quantitative measures such as the number of years of education of the entrepreneur, the number and type of degrees earned, or the number of years of relevant professional experience (Coleman, 2007). The specific human capital on the other hand is measured by the number of years that the individual has been employed by the business houses. However, some of the most recent literatures suggest the need to incorporate qualitative measures to enhance the working of human capital (Dimov & Shepherd, 2005), such as the subject area and degree level of the entrepreneur's or team-member's education.

In addition, research interests in human capital have expanded to include the mode of delivery of those characteristics which impact its quality. For example, Yamauchi (2007) gives evidence that suggests that the quality of human capital is dependent upon social learning and the cultural weight assigned to education. To a society, labor represents the economic interests of societal growth. Intelligent workers increase economic prominence, thus allowing intellectual development to promote economic growth. Accordingly, intellectual capital holds interrelated value to society and business. While such economic interests are measured for societal purposes (as in the rates of unemployment, inflation, or interest), business relations of the economics of labor supply and demand fluctuate, determining a necessary adjustment in value association. Labor is the business of a society and intellectual capital makes the society of the business. Thus, initially, in the knowledge era human capital had been considered an important part of Intellectual capital.

Human resource investments in developing leadership capabilities, establishing a committed workforce and human resource technology are of vital importance. Traditional intangible assets (e.g., R&D, goodwill, and risk factors) are recognized in the annual accounts of organizations, but these assets are defined very narrowly (Gallego and Rodriguez, 2005). Generally, intangible assets do not include human resources, company reputation, and information (Niamh and Brenda, 2000), yet these have significant potential to benefit the performance and development of the firm.

#### **Intellectual Capital:**

Intellectual capital is a combination of human capital-the brains, skills, insights, and potential of those in an organization-and structural capital-things like the capital wrapped up in customers, processes, databases, brands, and IT systems. It is the ability to transform (relate) knowledge and intangible assets into wealth creating resources, by multiplying human capital with structural capital.

This emphasis on corporate knowledge - including both assets within the firm and those derived from its external relationships - has led to an increased awareness of the concept of "intellectual capital". Intellectual capital (IC) consists of the knowledge embodied in the firm's personnel, in the capabilities of the organization, and in the relationships of the firm with its clients, partners, and suppliers. Intellectual capital includes the value of corporate experience that is embodied in a firm's processes, procedures, tools, and organizational structures. Also included in this definition is intellectual property, information stored in knowledge management systems, and knowledge management efforts that seek to extract value from the firm's knowledge assets.

The unique feature that distinguishes IC from other corporate assets is the underlying knowledge or know-how that can provide a firm with unique competition capabilities. More importantly, if we view these types of corporate knowledge as intangible assets, then intellectual capital has the potential to be managed and utilized to create value in ways similar to tangible assets.

The increased awareness of intellectual capital and the importance of knowledge-based assets can be regarded as a two-edged sword. On the positive side, these intellectual assets - what a firm "knows" - represents a resource that is unique, discrete, built over long periods of time, and is often difficult to imitate. In theory, managers can use their unique combination of staff know how, corporate processes, and relationships to create resources and capabilities that provide a competitive advantage over other firms. Since these capabilities cannot be quickly or easily replicated, the firm can continue to use this advantage to outperform competitors, thereby maximizing the value created for the firm and its clients

Unfortunately, knowledge-based assets are difficult to measure and manage. The same features that make many knowledge-based assets are difficult to copy. Their intangibility and long development times also make them difficult to manage and apply on development projects.

Companies are affected by changes in the economy. Similarly, the economy is affected by changes in companies. There are societal and business perspectives to consider when evaluating either a company or a business. Such is the case with evaluating intellectual capital. Intellectual capital as a compilation of an organization's human, customer, and market knowledge and experience is both a business value and an economic value. Yet the societal perspective of intellectual capital is primarily focused on value measurement (how much a business is worth), whereas the business perspective is on value creation (how much can the business be worth). Intellectual capital is important to a company because it links the company's present state with that of its future. It links the short-term and long-term motives of company management. By describing human resources, customers, systems, and business processes, intellectual capital helps a company create value through control of its available resources, thereby helping the company gain greater measured value in the economy.

Many companies have commissioned studies to examine intellectual capital and find ways to manage it. Some of these companies, for instance the Skandia Group (Sweden), Ernst & Young, and Canadian Imperial Bank of Commerce (CISC), investigate more formally than the others, yet all seek to determine new ways to leverage knowledge as a capital resource of the company. It is not known how and to what extent the certified public accountants and others in the field consider intellectual capital as a value determinant for investment or valuation. The understanding and importance of factors involved in the calculation of intellectual capital is further unknown.

Researchers all over the world are more interested in Intellectual Capital (IC), which incorporates both traditional intangible assets and non-traditional ones. There are many different intellectual capital (IC) models (Sveiby 2001). The majority of them provide an effective high-level taxonomy of intangibles which primarily anchors around three components: (a) human capital (HC), (b) structural capital (SC), and (c) customer capital (Relational Capital). These categories can be useful at the strategic level in terms of identifying the competence areas of the organization and in determining strategic objectives accordingly. In addition, the components of these models have been focused on surrogate measures (e.g., operational metrics, financial or even knowledge metrics) (Powell 2002), that contribute to IC valuation as a single component. Researchers have accounted for intellectual capital by several conflicting methods (Sveiby, 1997a), thus causing confusion in the concepts of the value and valuation method of intellectual capital in organizations.

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