Chapter-II

Review of Literature

2.1: Introduction

This chapter deals with the review of existing literature on the knowledge economy with respect to developed as well as developing country context. A large number of literatures in Indian context have also been reviewed for our purpose. Based on this review we have been able to identify some of the important aspects of the knowledge economy vital for the growth and expansion of different sectors such as agriculture, industry and the service sectors of the Indian economy. The review of literature has been done in section 2.2.

2.2: The Review

Knowledge Horizons (2000) edited by Charles Despres and Daniel Chauvel (Budler worth Heinemana) have arranged valuable 15 papers in four arranged sectors in which section I (Part I: Knowledge Management what is it?) comprises three articles, one by Kavl M. Wiig, one by Robert M. Grant and the third one by Charles Despres and Daniels Chauvel. The first article by Wiig elaborately discusses the long history of knowledge management, a major part of it being the intellectual roots of knowledge management. The present day knowledge management, according to Wiig, has many origins, like philosophical thinking, concerns for requirements of expertise in the work place, perspectives of education and business leaders.

The second article in the book by Robert M. Grant explores two specific questions relating to current knowledge revolution in management. The questions are as follows.

Why this recent explosion of interest in knowledge management? What are critically important contributions that the knowledge perspective offers to management theory and practice? The first section investigates the reasons for the
surge of interest and activity in knowledge management. The author specifically focuses in particular on the changes that have occurred in the world economy. In discussing second question the author explains that management is subject to fashion, hype, bandwagon effects, misinformation, and the activities of unscrupulous entrepreneurs. Grant views that in spite of its drawbacks knowledge management offers a set of ideas and insights that give if the potential to make the most important advance in management theory and practice of the past 50 years. The author asserts: although information and communication technology from e-mail to groupware, the Internet, and intranets have made huge strides in classifying, storing and transferring explicit knowledge, it is the management of tacit knowledge that the major challenge remains. The third article by Charles Depress and Daniele Chauvel (the editors of the book) explain, in detail, the sociology of knowledge wherein they define community and discuss models in the community. They also summarise three pillars of knowledge management as explained by Karl Wiig.

In section II of the book (Part II: Knowledge – Intensive Management) there are four important and resourceful papers relating to knowledge – intensive management. The first article in this section, contributed by Ikujiro Nonaka and Partick Reinmoellen, is about creation and utilization processes in knowledge creation theory which in effect discusses hard and soft components and structural and procedural perspectives of dynamic systems, creative routines, and hard and soft components of dynamic systems for knowledge creation and utilization. The structural perspective includes both information technology and organizational systems. IT provides the structure of creation and exploitation of explicit knowledge. IT in knowledge, the authors address, has three advantages, viz, efficiency, effectiveness and velocity. The authors give so much emphasis on human resource and career development programmes because these are the systems promoting internalization of explicit knowledge.

Another paper in this edited book by Anthony K.P. Wensley and Alison Venwijk – O’ Sullivan discusses knowledge management and the nature of the tools that we may have at our disposal to manage knowledge. The authors in this article state that knowledge management has to do with the management of all stages in the generation, codification, refinement, and transmission of knowledge. They also discuss that web offers a powerful platform for tools supporting all stages of
knowledge management such as SAP, ERP/ERM package, AFC (Active Collaborative Filtering) etc.

David J. Teece in his “Managing Knowledge Assets in Diverse Industrial Contexts” analyses that competitive advantage (superior profitability) at the enterprise level depends on the creation and exploitation of difficult to replicate no tradable assets among which the most important one is knowledge assets. It also discusses that competitive advantage flows from the creation, ownership, protection, and use of difficult to imitate knowledge assets.

J. C. Spenden in his “Managing Knowledge Systems” clearly mentions that knowledge is a corporate asset which must be managed scientifically. But it is not possible to manage knowledge until and unless it is identified properly. It also considers knowledge as an asset that can be privatized and objectified. Knowledge assets also present special management problems when knowledge needs to be transported, transferred, traded, or stored. Much knowledge management is about identifying and protecting and exploiting knowledge such as patenting. Another is about managing the processes of invention and innovation and is also managing information systems. Section III (Part III: knowledge – Intensive Organisations) comprises five most relevant papers.

Peter Murray, in his paper (Designing for Business Benefits from knowledge Management) develops a programme of action for organizations that are considering knowledge management and for this draws on a survey of 260 European businesses conducted by the Information Systems Research Centre at the Canfield School of Management. The paper specifically examines the perceived need for knowledge management, its nature, how success can be ascertained, and what learners there is to be effective knowledge management, and suggests some ways of implementing the programme. Michael J. Earl and Ian A. Scolt in their paper (What do we know about CKOs?) in 1997 made a study in the title the Chief knowledge officer or CKO and their results were published in 1999. They studied 20 CKOs in three steps, namely, they conducted interviews, administered a personality test and held workshops with the participants in London and New York to discuss their survey results. The CKOs are appointed by the CEO and they are not the permanent staff. Their aim, as the paper suggests, is to initiate knowledge management and ensure that the philosophy
and practice become embedded in the organization. Thus the CKOs have two particular leadership qualities – they are the entrepreneurs and the consultants.

Regarding the functions of the CKOs the authors add: “……. they have to create awareness of knowledge management, faster language and develop frameworks to help managers understand what it is, what is new and what can be done to sell the promise and to create support and demand for knowledge management initiatives”.

Etienne Wenger (2000) in his paper “Communities of Practice: The Structure of Knowledge Stewarding” [knowledge Horizon (2000), Edited by Charles Despress and Daniele Chauvel, Butter Worth Heine Mana] discusses that communities of price have been around for a long time. These are in fact the first forms of knowledge organization. Communities of practice are found everywhere at work, at school, at home, at gatherings it. This consists of three elements it has a sense of joint enterprise. This brings members together. It works as a community which creates a relationship of mutual engagement among the members. In this system learning takes place through joint activities with a concrete relationship of trust and mutual understanding. This produces the shared repertoire of communal rezone among the members through their mutual engagement. This includes routines, lessons learned, semibilities, artifacts, standards, tools, stories, vocabulary, styles, and so on. The communities of practice are also found with the businesses, across business units across institutional boundaries, and across multiple organizations.

Theories of the firm are concerned primarily with predicting the behaviour of firms in external markets. Neoclassical theory of the firm uses, in most cases, partial equilibrium analysis to predict firm’s purchase decisions in input markets and supply decisions in output markets. Robert M. Grant(1996) in his paper explores the coordination mechanisms through which firms integrate the specialist knowledge of their members. Here ‘knowledge’ is viewed as residing within the individual and the primary role of the organisation is knowledge application rather than knowledge creation. The author assumes that the critical input in production and primary source of value is knowledge. An interesting feature of the knowledge-based approach, as the paper suggests, is that it offers a theoretical basis for understanding a number of recent organizational innovations and trends which include the renovation of traditional organizational structures through delaying and empowerment and the development of new organizational forms including horizontal and team-based
structures and inter-firm alliances. The knowledge-based approach also calls into question other contemporary trends in corporate management. The primary driving force behind corporate restructuring and strategic change has been the quest for shareholder value maximization and enhanced shareholder power. The paper states that if primary resource of the firm is knowledge, if knowledge, is owned by the employees, if more of this knowledge can be exercised by the individuals who own this, then the theoretical foundations of the shareholder value approach are challenged. The paper gives emphasis on the application of knowledge and the role of individual.

Surendra Gera (1998) in his paper analyses industrial structure in Canada over 20 years from 1971 to 1991. In analyzing the role of knowledge in enhancing the level of output in the Canadian economy the author relies on Statistics Canada’s national input/output data for three sub-periods: 1971-1981, 1981-86 and 1986-1991. The study basically addresses three questions: Is the Canadian industry becoming more innovative? Is the knowledge technology and skills intensity of industrial output increasing? What are the key factors driving this structural change—domestic final demand, exports, imports, and/or changes in production techniques? The study analyses structural change at the sectoral and industrial levels. Industries have been identified as “high-growth” and “low-growth” industries. Canadian changing industrial structure has been analysed under three headings: change at the aggregate level, change at individual industry level, and the pace of structural change. Analysis at the aggregate level shows that there has been a dramatic decline in the manufacturing sector and a rise in the service sector. It also shows that primary industries and construction sectors have not shown any major changes in the output share. Analysis at the individual industry level shows that of the 13 leading growth industries in 1986-91 eight appear among those which led in the two preceding sub periods. Eight industries such as computers and office equipments, communication equipment and semiconductors, communication services, real estate and business services; community, social, and personal services, pharmaceuticals; Electricity, gas, and water; and finance and insurance are Canada’s growth engines.

The industries in decline are textiles, clothing, footwear, and leather; food, beverages, and tobacco; wood, wood products, and furniture; electrical equipment and appliances; iron and steel; other transportation equipment; other
manufacturing and heavy industries. As regards the pace of structural change statistical measures suggest that the Canadian economy experienced the greatest degree of structural change during the first half of 1980s.

The overall manufacturing sector in Canada, as the paper explains, has been declining over the long term consistently losing output share to the service sector since 1970s. This shows that there has been a clear shift in the composition of manufacturing output towards knowledge-intensive industries.

The shift from the industrial economy into knowledge economy shows how people think and what value they assign to all parts of their lives. Christopher S. Rollysen (2006) in his paper shows that knowledge economy will transform roles between all parties in the economy. It will see extensive collaboration in which buyers will tap into sellers resources to participate in the design and delivery of products and services. Similarly, sellers will access buyers’ knowledge about experiences and emerging desires. This, in fact, according to Christopher, will benefit buyers and sellers immensely and bring significant wealth. The knowledge economy, as the paper states, will be able to bring a quantum leap in productivity over the industrial economy. This is so because all economic agents (players) gain competence in creating, managing and showing digitized knowledge.

The Indian software industry has made an impressive track record especially since early 1990s. It is everywhere discussed that India can transform itself into a knowledge-based economy by riding the information technology bandwagon. Prabhudev Konana and Sridhar Balasubramaniam (2002), in their paper, give stress on sustainable and effective changes in information technology in India and in this discussion they expressed doubt about this situation because of the fact that nearly 80 percent of India’s population lives in villages with limited basic infrastructural facilities. Not only this, nearly 40 percent of the population is illiterate. Obviously, they will not be able to take the benefit of information technology such as the use of internet for gathering market information. A majority of the people whom we call literate also are unable to go beyond the ability to read and write simple words. This criterion does not support the growth and expansion of knowledge economy. It is a fact that economic development is cumulative. If industry develops, for example, it must help the agriculture sector to become more vibrant and productive. The productivity in agriculture multiples because of industrial and biological innovations.
including tractors, irrigation systems, fertilizers, pesticides and genetically engineered seeds. This certainly improves standard of living across societal divides. This was noticed in the developed nations during the age of industrial revolution. The paper states that the IT sector employs a few million people. But the alarming fact is that the IT industry holds limited potential for wealth to trickle down to the poor. This means that the rich and the educated can derive the full advantage of IT industry while the uneducated and the poor are oblivious to its impact. The IT can, the paper describes, change the way a society communicates, collaborates, lives, works and plays. The growth of IT sector in India symbolizes the potential of industry to perform at world-class standards. But the fact is that the success of IT at the corporate level in India cannot solve its unending social and economic challenges.

Resource-based theory tells us that there is perhaps no direct evidence to verify the fact that intrinsic characteristics of resources and capabilities such as their tacitness, complexity and specificity prevent imitation and thereby prolong exceptional performance. Susan K. Mcevily and Bala Chakravarthy (2002) in their paper investigate whether imitation barriers can protect advantages that stem from unique knowledge. They have tested this resource-based proposition by examining whether the complexity, specificity, and tacitness of a firm’s technological knowledge affect the speed with which competitors match its product performance improvements. An improvement, the paper explains, is any increase in product efficiency above and beyond the level of performance previously offered by products on the market, although it is distinguished between major and minor improvements according to the degree of advance. The authors expect that resource-based predictions for persistence will apply only to major product improvements because these are based on distinctive knowledge. Resource-based theory maintains that if a firm’s performance advantage is based on a unique resource, it should persist longer when a firm’s rivals cannot easily recreate or gain access to that resource. The authors continue that competitors must mimic a firm’s product design to match its performance, and this requires possession of comparable technological knowledge and that unique knowledge that is better protected by imitation barriers should confer more persistent product advantages. The overall explanation is that imitation barriers are at least partly located in resources, and suggest that the theory can be applied to knowledge resources. One of the important qualifications offered to this theory is that the size of a firm’s advantage may moderate the efficacy of these barriers.
The knowledge economy can transform the roles between all parties in the economy. All economic agents can be beneficial from the effect of knowledge economy. Manorama Tripathi’s paper (2006) gives an exposition of current developments in the information and communication technology (ICT) sector in India and their implications in transforming the country into knowledge economy. It specifically analyses the ICT infrastructure, policies, present states within the framework of India Vision 2020. It also describes India’s rank in global IT infrastructure, digital opportunity Task Force of G8 (Dot Force) World Summit on the Information Society (WSIS) Geneva 2003 and Tunis 2005. The paper dwells upon the challenges which must be overcome to attain the status of knowledge economy of the country.

Technology and knowledge are the key factors of production with increased mobility of information and the global work force, knowledge and expertise can be transported instantaneously around the world, and any advantage gained by a firm can be reduced or eliminated by competitive advantage within a short time span. The only thing that a country can enjoy is its comparative advantage of knowledge economy. Carl Dahlman and Anuja Utz (2005) in their paper have modified the definition of knowledge economy and have described that it would be appropriate to use the concept more broadly to cover how any economy uses the new and existing knowledge to improve the productivity in different sectors of the economy such as agriculture, industry and service. This would ultimately increase overall well-being of the country. They predict that India can increase its output at a maximum level if labourers can be shifted from low productivity and subsistence activities in agriculture, informal industry, and informal service activities to more productive modern sectors and knowledge based activities. This effort can be able to reduce poverty and touch every member of society. In their paper they have indicated that India has a number of favourable points to become a leader in knowledge creation and use. The paper states India has a critical mass of skilled, English speaking knowledge workers, especially in science and technology. Not only this India has a well functioning democracy and has a huge domestic market. It has macroeconomic stability, dynamic private sector, institutions of free market economy, a well developed financial sector and a broad and diversified science and technology infrastructure. The paper gives stress on strong basic education system and improvement of tertiary education. It states that tertiary education is critical for the
construction of knowledge economies. India, as the paper describes, currently produces a solid core of knowledge workers in tertiary and scientific and technical education, although the country needs to do more to create a larger cadre of educated and agile workers who can adapt and use knowledge. In this paper, the authors explain that, in India, with its relatively small formal sector, a very important part of its innovation system relates to how modern and more efficient practices can be diffused to the greatest number of users. India has done a remarkable stride in diffusing knowledge and technology especially in agriculture.

The rise in knowledge intensity is being driven by the combined forces of the information technology revolution and increasing pace of technological change all over the world including India. Rajarshi Majumdar(2007) in his unpublished paper (available in the website) states that since late 1990s, a large segment of mainstream media and economists have been giving emphasis on the emergence of knowledge economy in OECD countries and its consequent development in the developing countries. This new model of growth, the paper addresses, depending more on human knowledge and efficiency rather than on difficulty to disperse physical capital, is supposed to be more egalitarian. Proper policies in developing countries are advocated to build up large volume of working capital in terms of human resource crunch and meagre stake in global- trade. The paper looks at some of the issues related to knowledge economy in the context of Indian experience.

Ruben F.W. Nelson (2000) in his paper has rightly defined the knowledge economy and its impact on the different spheres of the economy. The paper says that it is the knowledge-in-use, and not merely the possession of information is the key to sustained success in every area of life and it is revealed in the growing preoccupation with the formation and transformation of cultures, whether in families, organisations or whole societies. It stresses upon the fact that social cohesion can no longer be achieved by either the assertion of one’s authority-technical or structural-or by the use of majority votes. Unconvinced minorities, as it describes now undercut virtually and become ungovernable if it does not develop the capacity to create, trust and act on knowledge that is both reliable and widely acceptable. The author gives a caution to us: “ If we are to survive as free persons and societies, we must develop a much deeper capacity than is now possessed by the citizens of any industrial society, to democratically co-create and agree upon that which, for us as persons, organisations
and society will be true and binding knowledge.” The author, in his paper, further asserts that it is time to grow into a full adult maturity and to use this as the only standard by which we will judge our knowing, believing and behaving.

The changing dimensions of the Indian economy in the light of the growth of knowledge based society has been portrayed in the writing of Rajesh Kumar Jhamb and Sanjay Kaushik (2008). They have indicated that in the knowledge-based economy, knowledge management has received considerable attention in the economy and it has in fact now become a mainstream priority for any business organisation. The paper relates the issue with globalization and concludes that information and knowledge society have increased the comfort of living.

Multinational corporations are essential global players in terms of global production and exports of goods and services. They are also more than enough competent in the home market relative to foreign markets. Keller and Yeaple’s paper (2008) explains all these aspects in detail with supportive data. This paper explains that multinational firms face increasing costs to transferring the technology abroad. This is contrary to the general belief that multinational corporations enjoy cost advantage because of cheap labour and lower transport cost if produced in the developing countries than at home. The authors state that due to increasing cost conditions abroad the MNCs are much successful if they continue to produce in the domestic market. This paper highlights the importance of intermediate inputs in international market flows. The authors have introduced a model of multinationals explaining a rich array of multinational behaviour by the interaction between physical transport costs and technology transfer costs. This model also considers physical transport costs and the ability of firms to fragment their production technology into traceable components. An additional assumption in this model is adopted. This assumption is that there also exist technology transfer costs that are increasing in the complexity of components in the production process. This also increases marginal costs of serving foreign markets as the size of transport costs increase. A set of hypotheses have been tested. One such hypothesis is that the cost of intermediates imported from the parent in total affiliate costs should be decreasing in transport costs between multinationals slower for firms with relatively complex production technologies. Another hypothesis that has been tested is that the probability that a given multinational opens an affiliate in foreign location should be
decreasing in transport costs and the rate of decrease should be faster for firms using technically complex production technologies. The authors have empirically tested the hypothesis and found that when technologies are relatively complex, affiliates have less opportunity to substitute for imports from their parent with local production. Also it is found that both the extensive and intensive margins of affiliate activity contract as transport costs rise, and this is true for firms with relatively complex production technologies.

Vinod Kumar, Harsha Sinvhal and Vinay K. Nangia (2009) study the impact of some thirteen areas in shaping a knowledge economy. They, in fact, elaborately analysed a proposal / project titled “National Competitiveness in the Knowledge Economy” prepared and submitted by Indian Institute of Technology – Roorkee to the Department of Information Technology of the Ministry of Communications and Information Technology in 2006. The key areas highlighted in the paper are demography, socio-economic scenario, IT-based and non-IT based technology, environment, natural resources – renewable and non-renewable, energy resources – renewable and non-renewable water management, national, regional and global inequalities, health, military, geo-political realities, agriculture and global system. It is stressed that India is going to be country of young people while the so-called developed nations may have a large size of population who are in relatively older group. In their paper a set of questions were raised regarding national, regional and global inequalities. The questions are as follows. What factors will decide the national, regional and global inequalities, and evolve strategies to bridge the gaps? Will knowledge economy widen the divide or bridge it? How can knowledge economy deal with the issue related to equal rights and opportunities, irrespective of colour, race and gender? It is stated that with better technology and knowledge of modern techniques, in developing countries also there may be a major shift of population from agriculture to other sectors of economy. It is also stated that the effect of knowledge economy on agricultural sector may ensure a better life for the majority of Indian population.

K. Narayanan and Savita Bhat (2009) in their paper have analysed the structure and behaviour of the IT fibers in India. The pattern of growth for the three segments of IT industry i.e. computer hardware, software and IT-enabled services has been attempted in this paper. An overview of IT industry in India has been analysed in
which the details of the initiation of IT industry in India during 1960s and 1970s and
the role India can play in this sector have elaborately been provided. By 1980s India
was capable of exporting software and computer peripherals. Also India permitted
import of mainframes and super computers for the purpose of modernizing the Indian
IT industry. The paper highlights the major policy issues India Government took
during 1960s and 1970s, 1990s and during 200-2006 for the growth of Indian IT
sector and its consequent effect on the growth of income and the growth of the gross
domestic product (GDP). This sector alone had an impact of over 35 percent to the
total exports. An empirical analysis of the sample data from the Indian IT industry has
been done wherein the growth, profits and technological behaviour of IT firms have
critically been described.

Arindam Banik and Pradip K. Bhaumik’s paper “India’s Transition to
knowledge Economy: Variation Across States” (2009) makes a comparison between
human and economic capital in developing country perspective. They have shown in
this paper the interdependence of economic and human capital. It is found that the
productivity of economic capital depends on the intensity of human capital and vice-
vers based on data published by the CMIE, Economic Survey data 2005 – 2006
published by the Government of India and the data published by Indiastant.com Only
the data of 2003-2004 were considered to especially explain the time dimension of the
transition of Indian economy into knowledge economy. The findings reveal that the
rise of knowledge economy is very important aspect for the overall growth of Indian
economy in the 21st century.

Siddharth Mahajan, Ashoka Chanda and Mainak Sarkar in their paper “An
Approach to Developing Knowledge Economy Indicators for Individual States”
(2009) have developed a knowledge economy methodology for the states of India
with a discussion on knowledge assessment methodology framework developed by
the World Bank.

The knowledge assessment methodology (KAM) developed by the World
Bank is based on four pillars, namely education and training, innovation and
technological advancement information infrastructure and economic and institutional
regime. The variables related to first pillar (i.e. education and training) are adult
literacy rate, secondary enrolment & tertiary enrolment. Innovation and technological
advancement include researchers in R & D (per million population), patent
applications granted by the USPTO (per million population). The third pillar i.e. information infrastructure includes telephones per 1,000 persons, computers per 1,000 persons and internet users per 1,000 persons. Economic and institutional regime comprises tariff and non-tariff barriers, regulatory quality and rule of law. The authors have measured the performance of a particular state over time with the help of knowledge economy indicators (KEI). KEI is calculated by taking the average of the normalized scores on the four pillars of the knowledge economy for each state. A state KEI between 0.9 and 1.0, the authors estimated, implies that the state is in the top 10 percentile amongst the states in moving towards a knowledge economy. A state KEI between 0.2 and 0.3 indicates that a state is in the bottom 30 percentile but above the bottom 20 percentile in moving towards a knowledge economy.

The comparison of a state’s KEI in a reference year (for example, 2000) with its KEI in the current year (May, 2013) can be seen in fig.-2.1 shown below.

**Fig-2.1:**

In figures-2.1, the X axis indicates state KEI in the base year and the Y axis the state KEI in the current year. The solid line bisecting the figure in the line y = x, that is the state KEI in the current period is the same as the KEI in the base period. A point to the left of the solid line in the figure indicates that the state has improved its relative performance i.e. the state KEI in the current period is higher than the state KEI in the base period. Similarly, a point to the right of the base line indicates that the state KEI in the current period is lower than the state KEI in the base period.
The authors also have tried to show a relationship between annual economic growth and knowledge economy indicators in the country level. Himanshu Joshi, Vidhu Shekhar Jha and Siddharth Mahajan (2009) in their paper have analysed that knowledge and learning are the fundamental factors for achieving business excellence. For this, the authors consider, it is necessary to establish and sharing. In their paper the authors have established a relationship between knowledge management and learning organization. It is a great challenge before any organization to properly manage its intellectual capital. In any business enterprise today knowledge has become power and learning rapidly has become a pre-eminent strategy for success. Obviously, knowledge is becoming more important to organization than financial resources, market positions, technology and other tangible assets. The authors have adapted the model of learning organization and business excellence from causal model of Eskildsen et al. (1999). This model is shown below in fig.2.2.

Fig – 2.2: Model of Learning Organisation and Business Excellence

Organizational transformation and the proposed benefits have been nicely described in the paper. The authors have built up a reinforcing model of knowledge management practice towards a learning organization for achieving business excellence. The model development by the authors is shown in figure-2.3.
Prema Rajagopalan and M.S. Mathes (2009) in their paper entitled “Indentifying New knowledge stream in the Evolving Knowledge Economy” have described eight core areas as streams of knowledge that evolve knowledge economy. These areas are identified in a workshop held at the Indian Institute of Technology, Madras. The Key areas thus identified are power and communication, computer science, biotechnology, infrastructure, nanotechnology, energy, manufacturing and mechatronics. It is stressed to recognize the existence of multiple knowledge economics in the global context and the scope and dimensions of each economy can range from a small community of a country to a regional integration of even many
countries. It is also hoped that each individual knowledge economy is well developed based on its distinct characteristics.

For economic development of a country the role of knowledge is paramount. Knowledge plays an extremely important role in the three pillars of development, i.e., economic development, environment development and socio-cultural development and it is the innovation and competitiveness that are vital for knowledge economy. Rajeev Ratna Shah’s paper entitled ‘Innovation in Knowledge Economy’ explains elaborately the key drivers of innovation, viz, technology, global competitiveness human resource, role of public and private sectors, public – private partnership etc. In a knowledge society, the author states, knowledge benefits the common man. Due to innovation and the consequent growth of the ICT it is now possible to have a complete list of all the villages and the names and addresses of all the villagers in India. Naturally, the implementation of rural development programmes such as MGNREGA can easily be monitored, although data capture is still a problem.

A.K. Sengupta in his paper ‘Intellectual Property Rights in Knowledge Management’ (2009) has described some issues concerning the interplay of intellectual property rights (IPR) in the knowledge management processes, in the industry and traditional knowledge sectors in Indian context. A detailed discussion has been made on the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) in which eight categories of intellectual property have been defined. These are patents, copyrights, trademarks and service marks, design registration, layout designs for integrated circuits, trade secrets and undisclosed information, geographical indications and new plant varieties.

An elaborate analysis has been made to patents throughout the paper. It is said that an effective intellectual property rights system can speed up the process of identification, development, dissemination and undertake of innovations through the expansion and development of knowledge economy in India.

Arundhati Chattopadhyay, G.S. Krishnan and U.S. Singh sponsored mechanisms, such as, 48, Association of Southeast Asian Nations (ASEAN), South Asian Association for Regional Cooperation (SAARC) and Organisation for Economic Cooperation and Development (OECD) establish international networks in the economic field.
International networks in the cultural field are established through increased communications and opportunities to travel. The core factors behind the current phase of globalization, the authors suggest, are least possible barriers to trade and investment, to minimum transport cost, least possible IT costs and the rule of internet. A broad and informative discussion has been made in this paper about the importance of knowledge network where the key elements of knowledge network are people, hardware, software, and procedures like access, navigation, observation, analysis, repository and learning. In this paper the authors explain that the problem of poverty in the Indian economy may be eliminated if India’s natural and human resources are fully utilized for building competence and technologies that lead to the creation of high – income employment and value addition in different sectors of the economy and for this purpose it is of utmost importance to create a knowledge society through the creation and maintenance of knowledge society infrastructure, development of knowledge workers, and the increase in productivity through creation, growth and utilization of new knowledge.

K. Sankaran (2009) in his paper explains the impact of cultural and social factors that promote self-organization among those who are trying to bring about effective social IT networks. In the course of analysis the author describes that inter-organizational arrangements such as just–in-time (JIT) and business process outsourcing (BPO) enhance overall effectiveness of network participants. The success of inherent and the firms like Google, as stated by the author, attribute to the power of collective minds together based on principle of self-organization. Mr. Sankaran has referred to a qualitative study conducted on how information technology (IT) can facilitate social capital among institution in the coastal areas of Karnataka. The objective was, the author explained, to find out the extent to which internet and IT are used by institution to exchange information among them, create and further ‘associations’ among them and receive and offer e-enabled services. In this study five types of organizations are indentified. These organizations are businesses, professionals, service providers, non-governmental organizations (NGOs) and government. The issues covered in this survey are of two types: Level 1 and Level 2. Level 1 issues are surmountable through better resource availability and use. Level 2 issues are related to how individual view themselves and their roles in an IT-enabled society. In this paper (chapter) the author argues for a more inclusive and open approach to IT network creation that is sensitive to both technical abilities and social,
cultural and behavioural factors. Surinder Batra in his paper titled ‘Promoting the use of Knowledge Management as a Tool for securing Larger Good of the Society’ (2009) describes about the importance of knowledge for development and for this purpose he refers two reports - World Development Report – Knowledge for Development, 1998-99(1999) and the OECD Report (1996). According to World Development Report, 1998-1999, knowledge is assured to be critical because knowledge depends on every economic activity. Since resources are scarce thus such resources needs to use in such a manner so that ever-higher return can be possible. This will be possible only through wider and judicious application of knowledge in production and management activities. The author discusses some of the characteristics of knowledge in the context of development identified by Ferreira and Neto (2005). The first characteristic/ feature of knowledge is that knowledge ‘leaks’ from the innovators to a large spectrum of society. The second feature is: when knowledge spreads in society it becomes a public good. Another characteristic is that linguistic, social and cognitive barriers impede knowledge from being transferred to whoever may need this knowledge. The author analyses the region of knowledge society in the Indian context and in explaining this he refers to the report of the task force India as Knowledge Superpower: Strategy for Transformation,2001 (Government of India). In this report a detailed discussion is made about our saints, poets, philosophers, scientists, astronomers and mathematicians towards our new thoughts, principles and practices. The report observes that India possesses a huge potentiality to be a leading knowledge society. In this report it is stressed that Indian knowledge society has three drivers, namely, societal transformation for a just and equitable society, wealth generation and protection of traditional knowledge.

Mainak Sarkar and Siddharth Mahajan (2009) in their paper (chapter in an edited book titled Knowledge Economy - The Indian Challenge, edited by Ashoka Chandra and M.K. Khanijo, Sage 2009) raise the question whether the government can improve its ability to provide services such as health, education, governance to its citizens through better management of knowledge. In this write up the authors discuss how knowledge management at the societal level is different from that at the company level. An interesting section in this paper discusses how typically knowledge management is implemented in a company and lesson for governments. Some interesting case studies have been highlighted wherein it is seen that governments are likely to face in implementing a knowledge management system.
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