

# Analysis of Role of Knowledge Management in Economic Growth

Mr Pritpal Singh Bhullar, Ms Samandeep Kaur

Assistant Professor,

Department of Applied Sciences and Humanities

Giani Zail Singh PTU Campus Bathinda, India

## Abstract:

*Knowledge and ideas have been emerged as key drivers for the economic growth in current scenario. Firm specific, Sector specific and General knowledge are the three forms of knowledge that play a significant role in economic growth. The well qualified human capital has positive impact on economic growth through total factor productivity. Past researches show that there is direct relationship between new ideas and human capital. As a result, investment in human capital led to growth in physical capital which in turn leads to economic growth. An attempt has been made to analyze the various factors affecting knowledge management and two economic growth models have been developed on the basis of those factors. Role of knowledge management in economic growth has been discussed by highlighting various important applications of knowledge management. This paper provide a light to the researcher for further development of scope of knowledge management in various economic sectors.*

**Keywords – Knowledge Management, Pillars of Knowledge Management, Factors affecting knowledge management, Models of Knowledge management, Implementation of knowledge management for economic growth**

## I. Introduction

Since last two decades economy has been shifted from one dimensional growth to multi dimensional growth. Globalization act as catalyst to propel the multi dimensional growth at exponential rate. Knowledge and ideas have been emerged as key drivers for the economic growth in current scenario. Knowledge has been considered as the third major factor of production after labour and capital. Knowledge play a phenomenal role in GDP of emerging economies with latest inventions across all economic sectors. Knowledge can be acquired only by continuous learning. The horizon of codified knowledge has been widened in emerging knowledge economies. Latest innovations and continuous improvement in firms are completely based upon fast developing knowledge in emerging economies. Twenty first century has been hailed as the era of “Knowledge Economy”. In today’s competitive world, knowledge acts as catalyst for the overall economic growth. Science, Medical and Technology are few areas where knowledge is influentially dominated.

In an economy, Knowledge can be categorized into three parts –

- a) **Firm Specific knowledge** – Firm Specific knowledge is very significant in creating and developing new ideas of improving various processes in all the departments like production, Finance, Marketing and Sales etc. It bridges the gap between production and post production functions of organization.
- b) **Sector Specific Knowledge** – Sector specific knowledge deals in developing products with change in taste of customers, implementations of new technologies in various processes as by their competitors of same sector.
- c) **General applicable (Scientific) knowledge** – Scientific knowledge guides in path breaking innovations across all sectors that give new dimensions to production phase of products. Research and development across all sectors has attracted a significant portion of investment in the economy.

## II. Review of Literature

**Bratti et al (2004)** designed a relationship model between economic growth and human capital accumulation. The model was developed on the basis of countries at different phases of development. The results show that there is positive direct relationship between education level and production level. This leads to enhancing the consideration of knowledge as a production function in competitive business scenario. **Loening (2002)** evaluated the effect of human capital on economic growth in Guatemala through the application of an error correction methodology. The research study disclosed that a well qualified human capital has positive impact on economic growth through total factor productivity. **Gupta et al., (2002)** observed the importance of knowledge management in the information technology dominated era. Knowledge Management has been emerged as an influential factor that helps in identifying, selecting, organizing, disseminating and transferring important information. Knowledge management aids the organization in formulation of strategies, effective decision making. **Van Dyke et al. (1999)** described the application of intelligent agent technology in filter out irrelevant content within the information. **Davenport et al. (1998)** observed that knowledge management system support in developing database and profiling of experts and also aid in accessing to non collocated resources through hardwiring of social networks. **Van der Spek and de Hoog (1995)** described knowledge management as a cyclic process of identifying, selecting, analyzing and reviewing the information that is valuable for the organization. **Romer (1990)** developed a model based upon endogenous growth that assumed a direct relationship between new ideas and human capital. As a result investment in human capital led to growth in physical capital which in turn leads to economic growth. **Polanyi**

(1967) described knowledge as tacit or explicit. Tacit knowledge described the personal quality that is hard to articulate and deeply described the reasons behind the occurrence of actions in particular context. Explicit knowledge described as the disembodied codifiable component that can be extracted from knowledge holder and shared with other individuals. Gailbraith (1967), Williamson (1968) and Chandler (1977) observed that exploitation of economies of scale by corporate houses has been emerged as the key drivers of innovation and technical change. Joseph Schumpeter (1942) supported the above views about technological changes. He also criticized that increasing influence of large corporate houses in the market would give a back hit to the innovation and technological change

The current research paper is a conceptual attempt to analyze the role of knowledge as a key driver for economic growth in current economic scenario. An attempt has been made to understand various factors affecting knowledge economy through this research paper.

### **III. Objectives**

The following objectives have been formulated to analyze the role of knowledge in economic growth -

- To identify various factors affecting growth of knowledge economy
- To identify the pillars of knowledge economy
- To identify various fundamentals of implementing knowledge management as key driver for economic growth
- To identify various applications of knowledge management in economic growth

### **Phases of Knowledge Management.**

Developing the knowledge and implementing of knowledge is not one step process, it is continuous process that happens in different phases. Knowledge management has mainly three phases of development -

- a) **Development phase:** This phase of a knowledge management initiative starts with the development and approval of a knowledge management strategy. There are the following aspects of knowledge design and development strategy:
  - Knowledge Management Strategy - Designing a strategy that demonstrates clear business benefits and is realistic approach.
  - Governance - Developing the core principles for information and knowledge management.
  - Knowledge management Practices - Selecting appropriate Knowledge Management practices that exploit the vast resources of tacit knowledge that reside within an organization.
  - ICT projects - Identifying specific information and communications technology project to support other aspects of the KM strategy; prioritizing and developing (or buying in) software tools and applications to support knowledge work.
- b) **Maintenance phase:** In a knowledge management system, maintaining a steady stream of contributions to content, the knowledge flow is an important issue. Thus a critical problem is to motivate users to contribute. This may be more or less difficult depending on the level of structuring of the content in the Knowledge Management System. When the knowledge content is highly structured, a great deal of effort is required up front to ensure the appropriate structuring. Employees are required to append appropriate keywords and meta-data to their documents prior to the uploading to the document repository or to fill out extensive skills and expertise questionnaires. While this may appear to be a simple, straightforward task, serious difficulties of knowledge representation and problems of motivation may exist.
- c) **Disseminating phase:** It is also necessary to spread or disseminate the knowledge in all over the areas of management to have the specialization in each and every facet, which is the foundation for the overall growth of the economy, as economy is comprised of all the areas combined, and knowledge in each field is required for the overall growth.

### **IV. Economic Growth Models**

On the basis of the various influential factors on knowledge economy, following two economic growth models have been developed.

#### **1. Factors affecting the Growth of Knowledge economy in model 1:**

- a) Flourishing Entrepreneurship by exploring new horizons
- b) Rate of transformation of theoretical education into skills and practices
- c) Rate of adoption of technological innovation
- d) Rate of dissemination and processing Information

Economic growth can be a function of above four factors. We can describe a new Economic Growth Model for a knowledge economy

Economic Growth =  $\alpha$  (Flourishing Entrepreneurship by exploring new horizons) +  $\beta$  (Rate of transforming theoretical education into practices) +  $\gamma$  (Rate of adoption of technological innovation) +  $\delta$  (Rate of dissemination and processing Information)

#### **2. Factors affecting the growth of knowledge economy in model 2:**

Knowledge of person can further depend upon following factors

- a) Level of education
- b) Work experience
- c) Working Hours per week

Economic Growth =  $\beta_0 + \beta_1(\text{level of education}) + \beta_2(\text{work experience}) + \beta_3(\text{working hours})$

Education at all levels (Primary, secondary and tertiary) contributes in economic growth of economy. Quality education leads to high skilled knowledge man power.

It was found that the one additional year in education increases the firm productivity by 3%.

#### Four Pillars of Knowledge economy

The knowledge economy is completely based upon the four strong pillars that take economic growth to another trajectory. These four pillars are:

- Economic incentive & Institution Regime.
- Innovation & Technological Adoption.
- Education & Training
- Information and Communication Technologies Infrastructure

Winston Churchill said, "*The empires of the future are the empires of the mind.*"

Knowledge has become the backbone of business. The ability to learn, understanding of complex business scenario and adapt to current changes in business scenario has been emerged as the core competencies for the survival of any business. Because of the perishable nature of knowledge, fast developing technology and business ideas, it has become mandatory to upgrade and expand the knowledge base by applying pillars of knowledge economy in the business. The strategic implementation of knowledge in the corporate house leads to effective and efficient utilization of resources, human capital and funds. The significance of knowledge has been increased with the rise in contribution of service industry in GDP of economy.

#### V. Principles of Implementing Knowledge economy

Implementing of knowledge for growth of economy is not an easy task. Before implementing knowledge following principle associated with knowledge must be keep in mind -

- **Knowledge is interrelated:** The knowledge is interrelated and connected to each and every thing and the organization can not pay attention to any one factor. Therefore, for the organization to grow, it has to consider all the factors at the same time and do not consider it in isolation to a single factor.
- **Knowledge is self organizing:** The purpose of applying the knowledge in any organization is self organizing as knowledge helps in making the things self employed for the members of the organization.
- **The more detailed knowledge creation reduces the creativity:** the more knowledge creation through the use of the codified knowledge documents, patents, libraries, databases lead to the reduction of the creativity as our minds work out to be worked knowledge facts and do not consider or attempts to find and explore the new facts and thereby reducing the creativity which somewhat decreases the extent of growth in the organization which thereby affects the growth of the economy.
- **Adaptive:** The knowledge is adaptive and there is no one solution to any problem. The knowledge fact is changing and knowledge economy helps in adapt to a particular problem as knowledge considers all the factors at different point of view and find the various solutions to a single problem to choose the best solution and the decision to be important for the growth of the economy.
- **Unlearning of the knowledge is also crucial:** Unlearning and retiring the old blocks of knowledge contribute to the evolution of the knowledge base as it increases the creativity and increases the scope of growth for the economy. Unlearning is crucial to replace the traditional concepts with the new innovative concepts which increases the knowledge economy growth.
- **No imposition of rules, regulations and systems on knowledge:** As it is self organizing, there will be no rules and regulations imposed on the knowledge creation and in a supportive environment, it will take care of itself.
- **Multiple levels:** there is no single way to manage knowledge. It is supported at various levels as there are various levels of knowledge creation and no single aspect in increasing the knowledge base. So the organization has to consider the various levels of the knowledge to grow the overall economy.

Human resource professionals have made staffing to sustain the knowledge competencies to replace the traditional job descriptions. They are developing the new curriculum through the increasing knowledge perspective, thereby increasing the growth perspectives of the organization and a economy as a whole.

The knowledge exploration can be done by:

- Increasing Technological advancements like information systems, databases, communication strategies etc.
- Increasing the Equipment support like whiteboards, videoconferences etc.
- Use of tools like the use of various management games, and computer based programs like CAD, CAM, SPSS and MATLAB etc.
- Creating more and more physical structures like learning centres, meeting rooms, discussion rooms and libraries etc.

This will significantly improve the productivity, process efficiency, workflow, enhanced knowledge capital, strengthened teamwork and increased employee satisfaction, which increases the growth prospects of the economy.

#### **VI. Core Knowledge Competencies**

Every business need unique expertise and technical knowledge for gain a cutting edge over their competitors. The employee of software developing company must know about the fundamentals of software engineering and he must be expertise in every technique related to software development. In today's frequently changing business environment, companies must work upon their capabilities and competencies to respond quickly. Their strategies must be flexible enough to tackle latest changes in market. Human capital in the organization must be trained in interrelated departments and are more job enriched to enhance their range of skills, decreasing the dependency for the company on a particular workforce and thereby enhancing the growth prospects for the economy. Useful knowledge is a socially good and as long as it exists somewhere and others have access to it, it can result in improved techniques that are lead to technological progress.

Innovation and complexity of technology has inverse relationship. The higher is the complexity in technology the less probability of new innovations by application of that technology. The technology must be user friendly and able to contribute in new innovations.

#### **Applications of Knowledge Management.**

Knowledge management has a wide range of applications which supports the overall economic growth. Some of these are as follows:

- Supporting research and innovation infrastructure such as science parks, innovation centres, incubators or support to clusters
- Strengthening creative interaction in the knowledge - businesses - public sector triangle
- Enhancing eco-innovation and the use of new environmentally friendly technologies and management approaches, such as public procurement for environmentally performing products and services
- Helping to restructure regions most heavily dependent on traditional industries
- Improving the capacity of regions for research and innovation
- Bringing innovative ideas to the market more quickly
- Improving qualifications for innovation
- Safeguarding and creating new employment opportunities in innovation and knowledge-based jobs and adapting local and regional employment policies to major socio-economic changes, notably globalisation and demographic change
- Developing local employment development (LED) initiatives
- Supporting capacity building and knowledge transfer for staff involved in business development and support
- Increasing investment in R&D related human capital
- Enhancing labour market participation of discriminated groups such as women and older workers
- Improving the adaptability of workers and enterprises, promoting a healthy workforce in healthy workplaces and expanding and improving education and training systems

#### **VII. Conclusion**

In the complex business scenario, innovation and knowledge have been emerged as the key drivers for economic growth. Knowledge leads to innovation that further improves the efficiency of firms to function. Even in the recession, the companies focus upon their research and development department that is based upon the knowledge of their human capital. Knowledge has been proved a major economic driver for the emerging economies like India and China. Education level, Rate of developing and disseminating knowledge, Experiences are some of the major factors that affect the growth of economy. Economic growth can be halted without developing new knowledge as it has become the lifeline of emerging economies.

#### **References**

- [1] Hiltz, S. R., and Turoff, M. "Structuring Computer-Mediated Communication System to Avoid Information Overload," *Communications of the ACM* (28:7), 1985, pp. 680-689.
- [2] Zack, M. H. "If Managing Knowledge is the Solution, Then What's the Problem?," in *Knowledge Management and Business Model Innovation*, Y. Malhotra (ed.), Hershey, PA: Idea Group Publishing, 2000.
- [3] Alavi, M., and Leidner, D. E. "Knowledge Management Systems: Issues, Challenges, and Benefits," *Communications of the AIS* (1:Article 7), 1999.
- [4] Cross, R. "More than an Answer: How Seeking Information Through People Facilitates Knowledge Creation and Use," Working Paper School of Management, Boston University, 1999.
- [5] Davenport, T. H., De Long, D. W., and Beers, M. C. "Successful Knowledge Management Projects," *Sloan Management Review*, Winter 1998 1998, pp. 43-57.

- [6] Van Der Spek, R. & De Hoog, R. (1995). A Framework for Knowledge Management Methodology. Knowledge Management Methods: Practical Approaches to Managing Knowledge. Vol. 3 pp.379-398. Schema Press, Arlington, Texas. ISBN 0-9638925-2-5.
- [7] Allee, V. (1997). "12 Principles Of Knowledge Management". Training And Development, Vol . 51, No. 11.