International Journal of Computing and Business Research (IJCBR)

ISSN (Online) : 2229-6166

Volume 5 Issue 3 May 2014

A REVIEW OF ENABLERS AND BARRIERS IN INNOVATION MANAGEMENT

Nancy Garg
Department of Computer Science
University College Kurukshetra University Kurukshetra

Karamjeet Singh
Department of Computer Science
University College Kurukshetra University Kurukshetra

Abstract: Innovation Management has been identified as an important approach to achieve competitive advantage over other organization. Enablers and barriers to implement innovation management need to be addressed and examined critically. The objective of the work is to contribute to the literature available by comprehensively reviewing and identifying enablers and barriers to implement innovation management. In this paper, background of innovation management and major contributions given by various researchers on innovation management has been presented. The factors to enable and barriers to hinder innovation management implementation successfully have been identified. Conceptual model has been proposed as a review. The work will help researchers and practitioners towards implementation of innovation management in more effective way.

Keywords: Innovation; Innovation Management; Enablers to implement innovation management; Barriers to implement innovation management; Conceptual Model

1. Introduction

Innovation Management is an increasingly covered topic in science and management. The motivation is that innovation is of key importance for survival of organization [1, 2]. "Innovation is the successful exploitation of new ideas" for "Innovation is the successful exploitation of something new, overall process in which an invention is transformed into a commercial product that can be sold profitably or the generation and application of new ideas and skills to produce new products, processes and services that improve economic and social prosperity. Innovation Management is the discipline of managing processes in innovation. It can be used to develop both product and organizational innovation. It includes a set of tools that allow managers and engineers to cooperate with a common understanding of goals and processes. It allows the organization to respond to an external or internal opportunity, and use its creative efforts to introduce new ideas, processes or products. There have seen substantial growth in the field of innovation management in last decade.

2. Enablers of Innovation Management

Present study understands the concept of innovation management; Study various enablers of innovation management; Observe barriers in innovation management.

- **Technological Contribution:** Innovation has been analyzed in connection with technology, trade, social systems and economic development innovation requires an evolution process of technology and culture. Technology is seen as a key factor on innovation and a source of competition advantage and new product development. Small and Medium sized enterprises have difficulties in this field because of the lack of sources [4]. Technologies especially come in to prominence as a powerful facilitating element of market innovation in individual and enterprise markets of information technologies. For example many banks make basic product characteristics more flexible as, a competition means for individual banking in financial services [5]. Technological change means an increase in contemporary knowledge needed for application of technology as well as the changes of the material and social phenomena concerning production. In other words, technological change includes all the aspects, such as developing new production techniques and designs for existing products, reorganization in accordance with the products developed, marketing and management techniques [6].
- **Human Contribution:** Successful businesses have competitive advantages in the market due to innovation and creativeness. These businesses make use of their human resources and direct them effectively in creating new goods and services for and marketing of them. The most important resource of innovative organizations is human beings. The more the employees of a business are encouraged for innovative productiveness the higher capacity is to realize innovations for that business. The most important difference between the individuals producing new ideas is their motivation [7].
- **Culture:** In order to direct the employees towards innovations, the applications affecting the spirit of entrepreneurship negatively within the organization and causing employees to avoid from entrepreneurship behavior should be abandoned at once. Therefore, it is necessary to avoid from the traditional management habits such as implying standards and strict procedures as a precaution against mistakes within the organization, inflexible long term planning, avoiding from taking risks, evaluating new formations by the existing experiences and promoting the most harmonious personnel. After these obstacles are removed the employees can be directed towards innovations [8].
- **Leaders:** Creativity and innovation do not emerge in businesses spontaneously. A creative and innovative organizational culture should be generated by managers [9, 10]. Management processes of innovation and creativity constituting the core of innovation is a process covering dissident people, ideas and even discussions. Discussions are also important for problem solving and determining alternative opportunities. Therefore, if a company chooses its employees among people who are like each other it would create a staff having similar opinions, education, and interests. Such a selection would cause the company to lose different points of view for solving

problems. So no creative discussion would take place and as no creative idea is produced, innovative activities would never take place [11].

- **Information :** Within innovation process, information is evaluated after it is gathered as for the technical facilities of the organization and then this information is used for developing ideas that constitute the core of innovation and finally the innovation process is completed by turning these ideas into tools and methods of design and production [12]. Individuals and organizations have been aware of the role of information within the rising competitive environment since the beginning of 1980s. Organizations have given priority to developing and managing their information based assets such as technological information and innovation. The increasing popularity of information based management techniques and resource based competition model among organizations prove the importance they give to this subject. For instance, the resource based theory states that it is necessary to form and disperse organizational information due to decreasing resources and changing competition conditions. Because the resource based theory accepts that beneath the basic skills of company lies information and this basic skill differentiates the company from others and the other companies would not easily imitate these companies. In other words, in order to reach a competitive advantage, companies should be able to create their information assets, transfer them and make use of them [7].
- **Level of competence of national institutions**

The incentive structures of national institutions and competencies determine the rate of technological learning [3]. The overall performance of an economy depends on how institutions interact with each other as elements of a collaborative system of knowledge. A national system is a useful unit of analysis because of common culture, legal framework, education, customer preference, institutions and many other variables that impact innovation [8]

- **Level of training in science, engineering and technical education**

Training in science and engineering education and a highly trained workforce in the relevant fields of science, engineering and management is associated with innovation at the national level.[11]

- **Level of research and development at the national level**

Innovation at the national level is positively associated with R&D. This at the national level increases the knowledge intensity of the processes of generating, producing and commercializing new goods and services and fosters innovation in different fields.

- **Level of incentive structures of national institutions**

The incentive structures of national institutions and competencies determine the rate of technological learning [2].

- **Level of immigration of skilled labour**

Controlled migration can help in importing technology and science and to ease pressure on the labour market. Roads and other transport infrastructure provide the means by which new products and services can be delivered. Local demand and export potential influence the degree of innovation in the industry. Literature indicates that innovation has been achieved in some cases due to market demand-pull. Globalisation in many cases means that innovations have a wider market

where they can be used. Globalisation encourages greater participation and integration of world trade, liberal government policies, changing corporate strategies and creation of global capital markets. [6]

- **Financial Support**

Tax relief for R&D expenditure encourages companies to venture more into R&D. Awarding of financial support to inventors and immigrant entrepreneurs, bestowed gifts of machinery, allowed rebates and exemptions of duties on imports of industrial equipment aids innovation by encouraging companies to venture more into R&D. Decrease in depreciation rates will help to increase investment in high technology plant and machinery [7].

- **Strength of social institutions and legal framework**

Social institutions and legal framework are closely associated with innovation at the national level. Creation, use and interplay with values, norms and legal framework enhance innovation. There is a need for intellectual property protection and regulations to develop and protect the innovations [4].

- **Strategy**

Ability of a company to define mission, goals and strategy for the future, based upon its ambition and vision and the ability to communicate these within the company.

- **Structure & Organisation**

How to structure the organisation and its processes for innovation? The way in which in a company tasks are assigned (organisation chart), how people are cooperating and the flow of material and information is managed (processes), how decisions are made (decision structure), how things are coordinated (deliberation structure), and how these processes and structures are supported by methods, tools and infrastructure. Innovative companies can have specific processes and structures for innovation management[10].

- **Idea Generation & Creativity Process**

The ability of a company to generate and select new ideas for innovating products, processes or markets. Companies with high capabilities in the former six categories should be able to generate these new ideas. However, this process stage is very important in innovation management and innovation support activities are often targeted at enhancing this capability in companies, often by offering methods and tools for creating ideas and supporting the selection process.

3. Barriers to the Innovation Management

From the literature review, the factors identified as barriers to innovation management are :

- **Human Problems:** People and their organizations are largely designed to focus on, harvest, and protect existing practices rather than pay attention to developing new ideas. The more successful an organization is the more difficult it is to trigger peoples' action thresholds to pay attention to new ideas, needs, and opportunities. [5]

- **Managing Ideas**

Managing ideas into good currency is important, it leads to innovative ideas implemented and institutionalized. While the invention or conception of innovative ideas may be an individual

activity, innovation (inventing and implementing new ideas) is a collective achievement of pushing and riding those ideas into good currency. The social and political dynamics of innovation become paramount as one addresses the energy and commitment that are needed among coalitions of interest groups to develop an innovation.

- **Structural Problems**

There exists structural problems of managing part-whole relationships, which emerges from the proliferation of ideas, people and transactions as an innovation develops over time. A common characteristics of the innovation process is that multiple functions, resources, and disciplines are needed to transform an innovative idea into a concrete reality-so much so that individuals involved in individual transactions lose sight of the whole innovation effort.

- **Strategic Problems**

The context of an innovation points to strategic problem of institutional leadership. Innovations not only adapt to existing organizational and industrial arrangements, but they also transform the structure and practices of these environments. The strategic problem is one of creating an infrastructure that is conducive to innovation .

- **Taxation**

According to Knight , taxation of new products, processes and services, which are undergoing the transition to full commercialization, acts as a barrier. Inappropriate government tax is seen as a barrier as it restrains innovation.

- **Government Interference and Management**

Innovation at the national level is negatively associated with government interference. Government interference and mismanagement scares away investors in the country, nurtures insecurity and increase risk.

- **Size of Domestic Markets**

Innovation at the national level is negatively associated with small size of domestic market. The size of domestic market and access to international markets matters. A small market means that producers will be limited in selling their products, processes or services.

- **level of Security**

Innovation at national level is negatively associated with insecurity that leads to low rates of invention and diffusion. High level of insecurity reduces the rate of invention and diffusion of market

- **Policies that discourage movement of labour**

Innovation at the national level is negatively associated with policies that discourage movement of labour. Policies that discourage movement of labour act as deterrents to innovation such as disciplines of factory hours in a construction industry.

- **Financing**

The negative impact of these barriers can be gauged from the fact that the financial constraints alone were cited 22 times as having led to abandonment of one or more innovation projects in the surveyed SMEs within past 3 years. Whereas 42 % of the project abortions took place in “early

phases" of the project, the rest had to be aborted in advanced stage of implementation (42%) thereby suggesting a significant loss in the form of sunk costs and lost opportunities.

- **Costs**

Costs of management innovation are more obvious than benefits. For instance, WL Gore cluster of factory plants sounds ridiculous in terms of costs savings for business orthodoxy. But in practice, it offers cross business learning to the people in the company.

4. Innovation Management conceptual model development

Closed loop input-output model has been conceptualized to achieve the objective of innovation management implementation. Barriers and enablers in innovation management implementation process have been also presented. [3] The objective of innovation management process is the development of new products and services that may benefit the public through innovation management, the creation and maintenance of mutually beneficial relationships with industry that enhances the usability of knowledge transfer. Inputs are quality human capital, education and training and evaluate and develop domestic capabilities. Process consisting of a need, searching for technology, monitoring information and assessment and output will be new innovations & new technologies.

5. Conclusion and Future prospects

The strong interest developing countries have in expanding their access to international technologies is understandable in light of rapid technical changes in the global economy. Detailed literature survey has been carried out to identify gaps in the literature. These research areas have been identified on the basis of literature and perceptions of the experts. The following directions for future research may be drawn from the literature review:-

- In course of reviewing the literature, very less or negligible literature on innovation management implementation from Indian perspective. Being a new area in developing countries like India, there is strong need to explore the area of innovation management.
- There is a need of research on integration of identified enablers in order to implement the technology transfer with high efficiency and at low cost.
- Very less work on modeling techniques like Interpretive Structural Modeling (ISM), Structure Equation Modeling (SEM) and Interpretive Ranking Process (IRP) has been reported to develop implementation models. So need arises to research on innovation management implementation models.
- In the course of reviewing the literature, eighteen barriers have been identified from extensive literature review. Much research is needed to remove these barriers to implement innovation management in most effective and efficient way.
- The management of innovation management is increasingly involved in strategic decision-making. Firms need to exploit their internal strengths and minimize their internal weaknesses to achieve sustained competitive advantage.

- There is strong need of research on impact of joint venturing to transfer of technologies in most economic and effective way.
- Most new technologies to save environment are being developed in developing countries. However, much of the potential for these technologies like green design, green manufacturing, green supply chain management, sustainable supply chain management etc. to make significant reductions in carbon emissions is in developing countries.

It is recommended that future research should not overlook the mentioned points, only the objective to increase implementation of the innovation management in most economic and efficient manner. It is hoped that this work may a serve as a good foundation for broadening research in area of innovation management implementation.

Refrences:

[1] Cooper, R. G. Product Leadership. USA: Basic Books. PHI New Jersey . 2005.
[2] Mulgan, G. and Albury, D., "Innovation in the Public Sector. Strategy Unit", Cabinet Office, UK. 2003.
[3] Bigliardi, B., Dormino, An Empirical Investigation of Innovation Determinants in Food Machinery Enterprises, European Journal of Innovation Management, Vol:12, No:2, pp.223-242. 2009.
[4] Humphreys, P., McAdam R., Leckey Jonathan, Longitudinal Evaluation of Innovation Implementation in SMEs,European Journal of Innovation Management, Vol:8, No:3, pp.2 83-304.2005.
[5] Johne, A. ,Successful Marketl Innovation, European Journal of Innovation , Vol: 2 , No: 1, pp.6-11.1999.
[6] Barutçugil, İ., , Teknolojik Yenilik ve Araştırma-Geliştirme ,Yönetimi , Uludağ Üniversitesi Yayınları , Bursa.1991.
[7] Güleş, H.K., Bülbül, H., , Yenilikçilik: İşletmeler İçin , 1. Basım, Nobel Yayınları, Ankara.2004.
[8] Naktiyok, A., Kök Bayrak, S., "Çevresel Faktörlerin İç Girişimcilik Üzerine Etkileri", Afyon Kocatepe Üniversitesi İ.İ.B.F Dergisi, Cilt. VIII, Sayı: 2:77-96.2006.
[9] Prajogo, D.I., Ahmed, P.K., Relationship Between Innovation Stimulus, Innovation Capacity and Innovation Performance, R&D Management, 36, 5:499-515.2006.
[10] Özçer, N. , Yönetimde Yaratıcılık ve Yenilikçilik, Rota Yayınları.2005.
[11] Leonard, D., Straus, S. , Putting Harvard Business Review on Breakthrough Thinking, Boston.1999.
[12] Eren, E., İşletmelerde Yenilik Politikası- Kuram Ve Uygulamada Yenilik, İstanbul Üniversitesi Yayın No:2884, Formül Matbası, İstanbul.1982.