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A Study On "Ict Based Innovations In Management In The Context Of Entrepreneurship"

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Abstract

This paper attempts to develop a model investigating impact of Information and Communication Technology (ICT) usage on entrepreneurs' innovations and business performance. Small and Medium Size Enterprises are major sources of employment and food production; therefore it plays a key role in Indian livelihood. Sector plays a major role for creation of employment opportunities, mobilizing domestic savings, poverty alleviation, income distribution, regional development, training of workers and entrepreneurs and creating economic environment which large industries flourish and contribute to export earnings. When considering the current statistics it shows that sector is not providing the expected results compared to developed countries. Thus there is a burning need to identify mechanism to improve SME performance in India.

Keywords: Entrepreneur, Innovation, Virtual enterprise, Small and medium size enterprises

Introduction

77.3 percent (Central Bank India 2022) of Indian population is living in ruralareas in India. Small and medium scales businesses in the rural areas are the major sources of employment and food production, therefore the Indian villager's livelihood. Thus all most all of the Indian governments who came in to power since 1947 has focuson developing Small and Medium scale Enterprises in rural India. Because sector plays a major role for creation of employment opportunities, mobilizing domestic savings, poverty alleviation, income distribution and regional development, training of workers and entrepreneurs, creating an economic environment which large industries flourish and contribute to export earnings. Understanding SME's contribution towards economic development, successive governments in India has taken various measures to develop the sector. But when considering the current statistics it shows that sector is not providing the expected results when compared with other developing countries. Ruzzier & Konecnik, (2006) as summarized by Omerzel & Antonc˘ic (2008) mentioned "Small and medium-sized enterprises, because they have an important role in the national economy. Their role in economy continues to be crucial for boosting economic performance." According to the international situations that there is a huge potential and opportunity for further development to the sector and make it a massive contributor to the national economic development and social wellbeing. Considering the statistics in various researches conducted SME's contribution for the economic development & social wellbeing of a country has played a significant role. Pushpakumari & Wantanae (2006) found that in country of Japan SME accounted for 99.7% of all firms comparing to the 0.3% of large firms and SMEs employed42 million people, which is 78% of total employment. It shows the significance of SME sector even in such a developed country. According to her findings in India, in 1996, small and medium Scale Industries (SMEs) account for 85.4% of all businesses

and 36.3% of employees are employed by them.
Even though such a massive contribution is given to the economy of the country SMEs face significant survival challenge. So researchers need to focus reasons behind this failure and the possible solutions for the long time survival of the SMEs.
It is visible that through various projects governments have tried to improve the existing businesses in the sectors like Gem and Jewelry, clothing, handicraft…etc without looking at more innovative opportunities for the entrepreneurs. Various entrepreneurship development programs such as Nipayum India 300 Enterprises Program, the setting up of 12 Special Economic Zones, Township Development Programs and Textile Processing Zones, have commenced. Those were very good initiatives to develop SME sector. Further it should focus new entrepreneurial opportunities for the sector (Ministry of Enterprise Development and Investment Promotion 2009). As discussed governments has taken various efforts to develop the sector and there are many pros and cons related to the initiatives. One major reason is that still there is no accurate root causes found that explaining the rationale behind entrepreneurial performance deficit in India due to lack of research and development in to the area.
Author has identified few researches publish in local context. Munidasa (2008) discuss some strategies of SME development in his policy paper but poor empirical results were mentioned on possible applications and success. Premaratne (2008) discussed in his research about "Entrepreneurial Networks and SME Development" but nothing on ICT Usage. Gamage (1989) has discussed Entrepreneurial characteristics and growth of small business ventures. Gamage (2003) Indian entrepreneurs use socio-cultural values to manage risk. But most of the researches conducted on entrepreneurship have not tried to find causality between entrepreneurs' ICT usage, innovations aided by ICT and the support for the business performance. Thus researcher is willing to pave the way with the topic "Impact of ICT usage on entrepreneurs' innovation & business performance".
Feasible opportunity finding and successful exploitation of those opportunities and commercializing the ideas could continuously supported by entrepreneur's ICT usage. There are success stories and research findings in global scenario related to impact of ICT utilization on entrepreneurship performance enhancement.
But it is the responsibility of local academia to further research on various aspect related to SME sector, recognize burning issues and feasible solutions to them.

Entrepreneur and entrepreneurship

Yamada J. (2003) on his research tries to identify and define the entrepreneur under functional view 'In the broadest sense, entrepreneurship is defined as activities to promote socio-economic stabilization and effective utilization of resources by stimulating socio- economic progress, creating new values, and providing employment opportunities." There he explains the value of entrepreneur's contribution towards the socio-economic development of a country. As defined by Johnson (2001) "Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products and, or services and then building a venture to take the product to market". Johnson (2001) highlights the requirement of entrepreneur's knowledge & skills on generating new innovative ideas and producing products and services combining factors of production in a profitable venture.
According to Harper (1996) entrepreneur is an innovator, a person who attempts to introduce on a commercial basis new products, new productive techniques, or even new forms of business organization. Entrepreneurs are likely to take proactive action with bearing risk to promote innovation (Miller, 1983, Covin and Slevin, 1991). First, most prior discussions on entrepreneurship have focused on innovation factors. Repetitious and routine activities of an organization are fundamentally changed through innovation to create a new environment, and in principle it is entrepreneurs that play such innovative roles. This definition of an entrepreneurial act is derived from the Austrian view suggested by Schumpeter (1971). The carrying out of new combinations to connect resources and people isa major function from their point of view.
The entrepreneur paradigm can be traced back to the 1930s when Schumpeter (1934) first attempted to establish a linkage between entrepreneurs and innovation in theory, and viewed the entrepreneur as innovator. Schumpeter (1937) maintained that innovation contributes to the growth of the economy because entrepreneurs produce innovations to the country or world. The concept of the entrepreneur as innovator underpins the entrepreneur paradigm in which the role of the entrepreneur is highlighted in the innovation process (Zhao 2005).
Entrepreneurship is about creating something that did not previously exist. The creation adds value to the individual and the community, and is based upon perceiving and capturingan opportunity (Johnson, 2001). Thus entrepreneur can be called a creator to the world. Thus entrepreneurs' role to the society is quite

significant. Bygrave and Hofer as referred by Legge and Hindle (1997) held similar views. They regarded entrepreneurship as a change of state, a dynamic process, and a unique event. Legge and Hindle (1997) believed that people who lead teams and organizations to introduce innovations are entrepreneurs. Entrepreneurs seek opportunities, and innovations provide the instrument by which they might succeed.

Innovation is the specific tool of entrepreneurship by which entrepreneurs exploit change as an opportunity for a different business or service. There is considerable overlap between entrepreneurship and innovation (Kanungo, 1999, Sundbo, 1998, Drucker, 1994, Schumpeter, 1934). Moreover, innovation has to address market needs, and requires entrepreneurship if it is to achieve commercial success (Zhao, 2001). Thus entrepreneur continuously change to address the market requirements and grasp the opportunity to gather unseen commercial benefits.

Second aspect of entrepreneurship is risk taking. Entrepreneurs are likely to take great risks to explore business opportunities and promote innovation Knight (1921). Further Harper (1996) defines entrepreneur as risk-taker, risking not only time, effort and business reputation but his/her invested funds and those of associates or stockholders. In this aspect it discuss that entrepreneurs as great risk takers they innovate new products and processers and the expose to great risk which will drive them in to great uncertainty which their products can win the markets or not.

Knight (1921) argues that the entrepreneur is the economic functionary who undertakes the responsibility of dealing with uncertainty. Uncertainty is also a cornerstone of Kirzner's theory of entrepreneurial opportunities. In fact, according to Kirzner (1997), discovery of entrepreneurial opportunities requires vision and alertness. For Schumpeter (1911, 1942) the function of the entrepreneur consists of the recognition and realization of new economic opportunities. Opportunities are not just potential products but also potential production processes and opportunities in marketing. Schumpeter's emphasis on innovation implies that risk and uncertainty are implicitly part of entrepreneurial opportunity. Thus author can identify risk taking propensity as another important characteristic of the entrepreneur.

Next characteristic function of entrepreneurship is its proactiveness in taking action ahead of competitors, and in gaining insights into market opportunities through proactiveness. While the foregoing discussion on innovative activities emphasizes the execution phase, the proactive aspect places greater stress on insight into market opportunities to induce innovations. Kirzner (1973), among others, insists on the importance of such insight. Assuming that the knowledge of those trying to enter the market is insufficient, he believes that there are always opportunities to gain unknown profits, and that the role of entrepreneurs is to identify and utilize such business opportunities ahead of others. Here it explains the entrepreneur as a proactive predictor and quick action taker. Not only he insight and intend the opportunities he immediately grasp the opportunities before anybody develop the knowledge about it. How entrepreneur recognize and understand business opportunities largely depends on prior knowledge and context (Scott, 2000).

Birley (1984) explain that entrepreneurship is often said to be a network activity. Expansion of a network is indispensable to firms at their start-up stage (Relnolds, 1991). As Granovetter (1973) puts it, economic activities are at the same time social activities. According to this entrepreneur is defined as a networker who expands his formal and informal network to enhance performance. Networking supports to identify new suppliers and buyers to the business and would support to strengthen existing links. At the same time networking with other entrepreneurs greatly support knowledge transfer.

According to these views that entrepreneurs can be recognized as an innovative, knowledge seeking, risk taking, proactive and socialized networker who scans the environment to expand his knowledge and experience to identify opportunities to exploit before any one develop expertise on them. Not only identify the gaps, he tries to fill them and immediately by providing solutions. Despite all innovation is the salient tool for successful entrepreneur. Entrepreneur & Innovation.

Many authors have emphasized entrepreneurship as the primary act underpinning innovation (Amit et al., 1993; Drucker, 1985b; McGrath, 1996; Stevenson and Jarillo, 1990), which also resonates with Schumpeter's (1961) view of entrepreneurship, as the primary catalyst for innovation.

Sundbo (1998) summarised the basic theories of the economics of innovation and identified three competing paradigms in the current theoretical discussion of innovation: the entrepreneur paradigm; the technology-economics paradigm; and the strategic paradigm.

According to Schumpeter's viewed the entrepreneur as innovator, which the role of the entrepreneur is highlighted in the innovation process. According to this paradigm, only a person who founds a new company on the basis of a new idea can be called an entrepreneur. Entrepreneurship is viewed as a creative act and innovation. Entrepreneurship is about creating something that did not previously exist. That is not required to be a new organization itself. Many others have developed the understanding on the concept as anything which is developed as original and different from the existing as innovation. That can be a concept,

product or service. The creation adds value to the individual and the community, and is based upon perceiving and capturing an opportunity (Johnson, 2001). Bygrave and Hofer as summarized by Legge and Hindle, (1997) held similar views. They regarded entrepreneurshipas a change of state, a dynamic process, and a unique event. Legge and Hindle (1997) believed that people who lead teams and organizations to introduce innovations are entrepreneurs. Entrepreneurs seek opportunities, and innovations provide the instrument by which they might succeed. Corporate entrepreneurship often refers to the introduction of a new idea, new products, a new organizational structure, a new production process, or the establishment of a new organization by (or within) an existing organization. As Herbig et al. (1994) have observed: "Innovation requires three basic components: the infrastructure; the capital; and the entrepreneurial capacity needed to make the first two work". So author can identify a strong relationship in between entrepreneurship and innovation.

Invention is the narrowest definition of innovation. Drucker (1994) maintained that there are seven basic sources of opportunities to innovate. Only one of them is to do with inventing something new. Innovation is thus more than invention, and does not have to be technical. Innovation is a proposed theory or design concept that synthesizes extant knowledge and techniques to provide a theoretical basis for a new concept (Sundbo, 1998; Bright, 1969).

There can be a possibility to convert this concepts to products or services or may not. Again this innovation can be a tangible one or may not. According to Cooper (1998) innovation has many facets and is multidimensional. As he explains the most prominent innovation dimensions can be expressed as dualisms: radical versus incremental; product versus process; and administrative versus technological. According to these views innovation is mainly related to originality and change of existing state.

Innovation can be radical and incremental. Radical innovations refer to path-breaking, discontinuous, revolutionary, original, pioneering, basic, or major innovations (Green et al., 1995). These radical innovations are more risky. Radical innovations required hugeknowledge capital and financial capital to be invested. That will put the entrepreneur in to a greater risk. Incremental innovations are small improvements made to enhance and extend the established processes, products, and services. It is less risky and entrepreneurs are supposed to deal with more certainty. Comparatively required effort and investment for an incremental innovation is lower. But incremental innovations are not strong enough to make big ripples in the market or any other environment. When risk is higher on innovation, it makes higher returns or losses. However, this contradistinction does not "necessarily [correspond] to the more fine-tuned reality" because "radicality is a continuum" (Katila, 2002, p. 307). Product innovation, as the name suggests, "Reflects change in the end productor service offered by the organizations, [whereas] process innovation represents changes in the way firms produce end products or services" (Utterback cited in Cooper, 1998). Some researchers have categorized innovation into technological and administrative innovations. Technological innovation is about "the adoption of a new idea that directly influences the basic output processes, [whereas] administrative innovations include changes that affect the policies, allocation of resources, and other factors associated with the social structure of the organization" (Daft 1978 cited in Cooper, 1998).

In parallel most important, as well as consistent, factors to emanate from the innovation literature focus on the product; that is, new ideas and the potential for improvement through change. New ideas can be placed on a novelty continuum. Heany (1983) suggests that the least novel and risky form of innovation is to incrementally change the style of a product. In contrast, at the other end of the continuum, major innovation is held to radically influence the market place. In addition, major innovations have the potential to create new markets and new industries. This in turn can place considerable strain on all the functional areas within an organization, and can be highly risky and uncertain (Brown, 1992; Clegg et al., 2002; Von Stamm, 2003). This may end up with creating new organization. Between these two in the continuum, Heany (1983) specifies four other types of innovation: product line extensions, product improvements, new products for the current market, and new products for another established market in which the vendor is currently not involved. According to Drucker (1985b), Heany's products of innovation are associated with wealth production for the organization, which is a form of added value. As a result, innovation can be defined as a process that provides added value and a degree of novelty to the organization and its suppliers and customers through the development of new procedures, solutions, products and services as well as new methods of commercialization (Covin and Slevin, 1991; Knox, 2002; Lumpkin and Dess, 1996). Basically this innovation may spread through the value chain ofthe organization. The mutual understanding and the strength of the communication with value chain is really advantages in this process. Naturally fully fledged ICT infrastructure of an organization may ease this process.

Schumpeter (1934) also suggested similar concept in his taxonomy types of innovation on the basis of the

object of change, speaking of, for example, product, process, market and organizational innovations. Next we may try to make a difference between innovations on the basis of their "newness" or "radicalness", i.e. based on the extent of change. According to this view, radical innovations are those more or less revolutionary amendments, which, in very exceptional cases though, may even serve as the trigger for completely new technological trajectories (Dosi, 1982; Utterback, 1994).

Zhao (2005) tried to define innovation broadly by using above arguments to include new products, new processes, new services (including new uses of established products, processes and services), new forms of organization, new markets, and the development of new skills and human capital. He has been able to nice to summarize all the above arguments. This will be instrumental on understanding innovation in and more sensible manner.

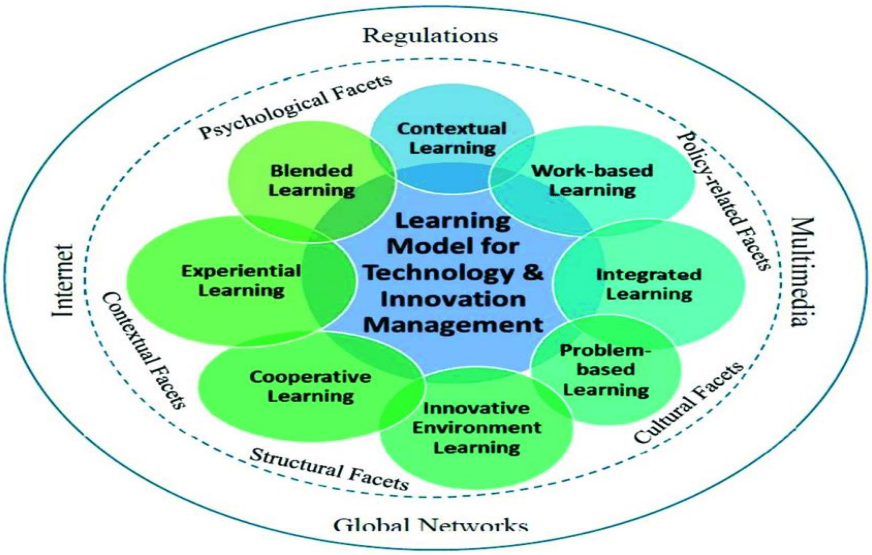
The common attribute attached to an innovation is, of course, "newness". But, as we occupy the filled-with-knowledge kind of world as we do, the question becomes: new to whom or new in what way (Johannessen et al., 2001). Align with above concept, Innovation may refer to very different kinds of "newness" regarding products, production methods and technologies, markets, and organizational configurations, among other things, it is reasonable to assume that the sources of useful information & knowledge may vary between different types of innovation. This possibility has been, however, recognized only fairly recently (To¨dtling; et al., 2009; Freel and de Jong, 2009). But as explained previously originality is attach with the newness discussed here. Original things are already in the category of newness.

Innovations are not coming freely in its way. It is derived based on existing context of knowledge, where it happens by changing the existing context of knowledge radically or incrementally. According to Varis M. & Littunen H. (2010) innovation is the elixir of life for firms, regardless of their size or other attributes. Growth, success and survival, all depend on the ability of firms' to innovate on a continual basis. By the same token, knowledge is understood as the main ingredient in the concoction of innovation. The prerequisite of every innovation is either the generation of new knowledge or, alternatively, and more typically, the combination of existing pieces of knowledge in novel, "entrepreneurial" ways (Schumpeter, 1934; Drucker, 1985).Varis M. & Littunen H. (2010) in their research adopted the definition of innovation suggested by OECD (2005). According to this view, we may have four different kinds of objects of change, i.e. product, process, market or organizational innovations. These are more aligned with the views of previous authors. Additionally, the extent of change associated with innovation may be depicted in terms of complete newness or significant improvement. In their research they try to identify the relationship between novel product and market innovation with more or less frequently accessed information sources. And they try to identify the association of organization performance with the innovation process. Basically considers the growth and profitability of the organizations. This proves that knowledge of the entrepreneurs is an important factor to introduce innovations to the organization. Innovations are supporting to reduce costs and gain profits and growth. This knowledge based innovation challenges Schumpeter's (1934) theory of congenital "innovative individual". With reference to the literature author suggests here is that congenital entrepreneurship can be further optimize by knowledge based innovation.

In Varis M. & Littunen H. (2010) findings, in the case of product innovations, a positive relationship was found between the use of different freely available external information sources (exhibitions, fairs, internet, media, etc.) and the introduction of novel product innovations and they saw a positive relationship with the firms growth and innovations.According to the literature positive relationship exist between knowledge acquired from freely available external information sources (exhibitions, fairs, internet, media, etc.) and the successful innovations. Further positive relationship between knowledge and entrepreneurial performance specially related to growth or long term profitability of the organization. Next we may consider the organization as an important level of innovation analysis. These two micro level of approached for innovation is labeled as "Internal" or "Introvert" as its' main focus is on factors internal to the organization.

The network school on innovation (Ha°kansson, 1987; Ha°kansson and Snehota, 1989), emerging from the mid-1980s onward, emphasizes the importance of external relationships, especially with other firms, in acquiring critical inputs required to undertake innovation processes. According to this they explain that organizations individually can't innovate, they have to get many innovative inputs to the organization from outside world. Therefore organizations should have to build strong network with external environment to absorb relevant knowledge and material to continue in innovation process. Finally, we have the now so popular systems of innovation (SI) approach, initiated by Lundvall (1988, 1992), Freeman (1987), and Nelson (1993), among others, which shares many common elements with the network approach but places far more emphasis on the holistic and ubiquitous nature of innovation, as well as on the complex web of interactions and on the institutional environment guiding and facilitating the actions and interactions of economic agents. Organizations ICT systems will be really useful to build and maintain aforesaid network of

interactions. According to Varis M. & Littunen H. (2010) regarding the nature of innovation processes, the meso level approaches of networks and innovation systems may be labeled as "external", or "extrovert", as they emphasize the importance of cooperation with other actors, rather than the self-sufficiency of individual entrepreneurs and firms. The notions of networking and systemic innovation reflect the now well recognized fact that firms, in general, do not innovate in isolation from the surrounding world, an idea that actually would not had received appreciable endorsement only some time ago. According to this concept firms arranged as more open entities. They are more open to the environment and connected to other organizations. Knowledge may flow freely from one organization to another. But the firms who utilize the knowledge in most efficient, effective and innovative manner will be successful. According to this networking concept knowledge diffusion and related innovations are faster.We need to focus here on the network approach and the systems of innovation (SI) concept, as their advantage over many of the related concepts that in regard to innovation processes, they are more precise in terms of the relationships and actors involved (To¨dtling et al., 2009). The network approach and the SI concept thus overtly stress the importance of relations between innovative firms and other firms and organizations, instead of leaning on somewhat loose assumptions about the existence of some kind of innovation-generative "culture", "climate", "milieu", which is a typical starting point in many of the related approaches, such as "learning regions" or "innovative milieus".Many previous researches have emphasized particularly the importance of vertical network relationships with suppliers and customers as an important source of innovation- related inputs (Von Hippel, 1988; Lundvall, 1992) but sometimes also horizontal relationships with competitors are of importance in this respect (Hamel et al., 1989). Both the internal and external environments can have a significant impact on innovation (Jin, 2000). Evidence shows that firms develop different products (creative imitations or major innovations) due to environmental factors such as its relationship to the market, its competitors, and industry practices (Ali, 1994). Constant and rapid change in the business environment can make decision-aking and innovation uncertain and ambiguous (Greve and Taylor, 2000). Thus, organizations must systematically scan both its internal and external environments. A thorough examination of the internal environment involves the evaluation of novel combinations of existing technology, shelved concepts and ideas, and new applications for existing competencies.According to the discussion author conclude that that knowledge of entrepreneurs' is a key factor affecting the innovation. Knowledge related to products, processes, organizations & markets will continuously supplement the innovative process of entrepreneur. Such knowledge can be acquired through networking with the environment. Specially as mentioned above with suppliers, customers, distributors and competitors. Author can presume ICT as one of the key tools instrumental on knowledge absorption from different internal and external sources related to product, process, markets and Organizations. And that knowledge on exiting states of product, process, markets and organization will create the opportunity for innovation and success in all of them.



Conclusion

Entrepreneur in SME sector is a very important character who has the strength to boost the economy of a country. The conductive milieu created for him to innovate would optimize the performance of him. Entrepreneurship is a concept which is not detachable from the concept of innovation. Innovation is not coming free but it origins at human mind with the aid of knowledge absorbed from the environment.

Business innovation can be categorized to four basic concepts according to literature namely; product, process, market and organizational innovations. Innovation refers a newness which can be radical or incremental. Mentioned innovations may differentiate one organization from another. That difference may attract the customers for the innovative organization. Further these innovations may support entrepreneurs to identify unseen markets, develop new processes and introduce new organizational structure to adapt those processes and to develop quality products with low cost to win competition. Ultimately these innovations would generate extraordinary profits for the entrepreneur. Four types of innovations may drastically improve the business performance and management of the entrepreneur, therefore in SMEs.

ICT can be recognized as a salient enabler for such innovations. ICT gives an immense contribution for the innovation process from initial opportunity identification to knowledge acquisition, internal communications, product development, market identification, supplier collaboration to the sale and delivery of products and services.

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