“An Exposition on the Impact of Technological Encroachment and Innovations on Entrepreneurship in an Organisation”

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Abstract

With the progression of Industrial Revolution, the world has experienced an unprecedented rise in economic growth that has been stimulated by innovation, technology and entrepreneurship. It is well said that Innovation leads to Technology that leads to many opportunities for the Entrepreneur. Technological advancement and innovations in the stipulation of contemporary economy based on knowledge are important factors that stimulate the development of organisations. Entrepreneurship can occur in a business of any size or age because, at heart, it has to do with a certain kind of innovated activity which resumes into the disciplined effort to improve a business's potential. Most innovations and technological encroachment result from a conscious, purposeful search for opportunities within the company and the industry as well as the larger social and intellectual environment. A successful technological advancements and innovations may arise from pulling together different strands of knowledge, recognizing an underlying theme in public perception, or extracting new insights from failure. The focus is to know where to look and what to opt. The paper will emphasize on a meticulous literature review from a comprehensive standpoint in order to determine critical factors that affect technological encroachment and entrepreneurial innovation in an organization. The study also aims to identify the impact of these factors on entrepreneurship in an organisation. This is a qualitative research and the study is based on the Secondary Data collected from different sources. The contribution of this study will help the organisations to better understand the quintessence and significance of Technological advancements and innovations in contemporary business environment.
Keywords: Technological Encroachment, Innovations, Entrepreneurship, Economic Growth.

Genesis

Innovation isn't simply changing the way one work and convey, it's totally changing the way one think and take care of issues. Innovative creations are new principles and thoughts regarding what to deliver and how to do it. Technological infringement and advancements results when new guidelines and thoughts discover viable use through being connected as well as popularized by business visionaries. In Today's market of technological age and worldwide economy, rivalry has turned into information based. In present day hypotheses of development and technological advancement has taken the middle stage. Our adoration for oddity and new contraptions is along these lines dependent on reasonable and hypothetical establishments. Besides, there is developing enthusiasm for the connection between Technological infringement, advancement and business enterprise and how it can advance worldwide development and improvement. It adds to more elevated amounts of monetary yield and can convey new merchandise and ventures that change human lives and abilities. Most market analysts concur that with the development of Industrial Revolution, Technological infringement and advancement go about as a key driver of monetary development and human prosperity. (as shown in Figure 1).

![Figure 1: Statistics on world Population, GDP and Per Capita GDP](image-url)
The possibility of entrepreneurship has been around for a considerable length of time however since the Global Financial Crisis it's been pushed back to the bleeding edge of business. Having a pioneering soul is something important for big corporations and small businesses are endeavoring to set up inside and task to the more extensive world. A considerable lot of the world's biggest organizations have, as of late, propelled startup programs, financing business as a way to draw on the coordinated, blue sky thinking technique to encourage their own endeavors. The uplifted enthusiasm for enterprising reasoning and the effect of Technological encroachment and innovations has had on it, has changed being a business person. Business is worldwide. Innovation implies the thoughts; advancements and occupations that are produced by business people have a worldwide effect. A business visionary in Australia isn't kept to that nation; it can possibly tackle worldwide issues and arrive at a worldwide market. Innovation has made it simpler for business people to have their voices heard and impact discussions. The pace of innovative change has changed the manner in which business people work and they should most likely adjust rapidly so as to endure and be effective in this worldwide business world. In any case, the negative social demeanors about innovation and its problematic impacts could undermine receiving these rewards. Approach reactions that reflect such frames of mind (and dishearten development) hazard activating monetary stagnation, diminished financial dynamism, and settle for what is the most convenient option.

**Literature Review**

Notwithstanding the way that till date broad research studies and observational work is done on the effect of Technological encroachment and innovations on global premise but yet not very many investigations have been directed on the Indian context that is the major research gap of the study. The motivation behind the literature review is to recognize, assess, and look at the current best routine with regards to Entrepreneurship. The literatures are gathered from different research ponders, paper, articles published in various journals and so on. It abridges different inquires about, which have been directed in the territory of technological progression and developments on entrepreneurship and different components identified with it. There is a wide-ranging discussion on Entrepreneurship typology, process and determinants relevant to the research which is essential to understand Technological advancements and innovative mechanisms. According to Hébert and Link (1988, p. 152) entrepreneurship is defined as “someone who specializes in taking responsibility for and making judgmental decisions that affect the location, the form, and the use of goods, resources, or institutions”. Thus, broadly speaking, entrepreneurship refers to perception of opportunity and the ability to act on that perception. A number of authors join a debate on Technological entrepreneurship but only few of the researches which are relevant to the study are as follows:
According to Daft (1978) 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”.

Bozeman and Link (1983) argued that invention is the creation of something new. An invention becomes an innovation when it is put in use. When innovation is conceptualized in a static sense, as in the quoted sentence just above, an innovation put in use is a new technology. When the innovation is the final marketable result, it is called a product innovation; when the innovation is applied in subsequent production processes, it is called a process innovation. More interesting is a dynamic view of innovation; that is, the process whereby an invention becomes an innovation – the so-called innovation process.

According to Nelson (1993) innovation encompasses “the processes by which firms master and get into practice product designs and manufacturing processes that are new to them.”

In one of the study of Bacon et al. (1994) stated that high technology industries are those that have short development cycles because products of competitors who are not keeping up with the latest industry developments quickly become obsolete.

Jones-Evans (1995) identified that interdependence between small-firm initiatives and the external infrastructure that contributes to science and technology advances. This theme describes the systems that support the foundation of new technology firms, establishment of a new technology venture and different types of technical entrepreneurs.

Drucker (2002) stated that innovation does not have to be technical. It is an economic or social rather than a technical term. It can be characterized in supply terms as changing the yield of the resources. But in modern economy it can be defined in demand terms as changing the value and satisfaction obtained from resources by the consumer. Drucker have proposed the term of “systematic innovation” that depends on purposeful and organized search for changes, and on the systematic analysis of the opportunities such changes might offer for economic or social rather than a technical term.

Liu, Chu, Hung and Wu (2005) represent ways in which entrepreneurs draw on resources and structures to exploit emerging technology opportunities. Other articles cover topics on: university and business incubators, firm spin-off and technology transfer mechanisms, government programs that support technological entrepreneurship and entrepreneurship education.

As Fagerberg (2006) shows that both Invention and Innovation are closely linked and it is very difficult to distinguish one from another. But in many cases, there is a considerable lag between the two. However, a main difference between invention and innovation is that the former may be carried out anywhere, while innovation occurs mainly in firms that need
to combine several different kinds of capabilities, knowledge, resources and skills.

According to Petti (2009), the concept of technological entrepreneurship incorporates four main sets of activities relating to

(i) creating new technologies or identify existing technologies (but previously undeveloped),

(ii) the recognition and matching of opportunities arising from the application of these technologies to emerging market needs,

(iii) technology development / application and

(iv) business creation.

Garud & Karnoe, (2003) proposed that technological entrepreneurship is understood as a joint-production phenomenon that draws from a team of specialized individuals from multiple domains, some or all of whom become embedded in the technology path they try to shape in real time.

Poznańska (2010) emphasizes that technological entrepreneurship provides a practical usability of research results through an effective collaboration between science, technology and the commercial world. Inventions, discoveries and new technologies as a result of the implementation and development of the commercial market – form technological innovations that determine.

Bailetti (2012) proposes a definition of technology entrepreneurship, and describes its distinguishing aspects. The author argues that “technology entrepreneurship is an investment in a project that assembles and deploys specialized individuals and heterogeneous assets that are intricately related to advances in scientific and technological knowledge for the purpose of creating and capturing value for a firm”.

One of the study conducted by Flaszewska & Lachiewicz (2013) discusses the concept of technological entrepreneurship in Polish literature focuses on efforts to connect the scientific potential of universities and research and development centres with capital market institutions and business activities. It is important to ensure optimal conditions for the commercialization of research results and their usage in enterprises in the form of new products and services through effective collaboration with research centres and the business-related sphere.

- Venkateswara Rao, et al. (2017) revealed that founders put emphasis on the technical and business knowledge to be essential for techno-entrepreneur. Technology related skills and knowledge were strongly present in the profile of entrepreneurs. From a policy perspective, advancements in formal technical education, both graduation and post-graduation created a base for technical skill set in India and found to encourage TE.
Figure 2: Systemic Approach to Innovation - Eight Interwoven Areas

On the basis of literatures collected, Figure 2 indicates factors of successful Innovation. These factors are collectively adding a new dimension to business and it takes place through various innovative practices, technological encroachment and individual competencies which ultimately yields to entrepreneurial effectiveness.

Objectives of The Study

The objectives of the study are as follows:

• To study the role of Entrepreneurship in an organisation.
• To determine the critical factors that affect technological encroachment and entrepreneurial innovation.
• To identify the impact of these factors on entrepreneurship in an organisation.

Research Methodology

The investigation depends on the Secondary Data gathered from various sources. In this technique researcher discovered the data through alluding different books, look into papers, Journals, sites and general perception overall. For the study, the researcher had chosen to pursue a subjective methodology and along which the research methodology incorporated a hypothetical report. The investigation depends on the secondary data gathered from various sources like Ebsco, Emerald, Scopus, Thomson Reuters and Google Scholar. For the investigation, the researcher had chosen to build up a theoretical system and therefore, the exploration philosophy incorporated a hypothetical report.
Role of Entrepreneurship in an organisation

Entrepreneurship role in one's life may advance after some time. For instance, formerly all-ingested, free-wheeling business visionary may select jobs with less active contribution and budgetary hazard once the person in question turns into a parent. A parent who has "off-sloped" from a huge firm for family reasons may choose that business offers an engaging profession elective. What's more, in later years, both may wind up helping their youngsters with their own endeavors as opposed to "playing once more" themselves. Business visionaries must assess every open door with regards to their present circumstances and life plans. The resultant life plans are to be referenced routinely and refreshed as the environment and one's close to home conditions change. Basic the existence plan and the system exhibited in this note are various premises:

• An individual meaning of achievement ought to be multi-dimensional; "striking it rich" does not really give one the importance of life.
• As business visionaries, one is blessed to have options. They should know about what general surroundings offers and what it requests in return for its largesse.
• Long haul achievement isn't the consequence of a progression of the present moment, flawlessly arranged choices. Choices are dependent upon each former choice and on numerous components outside our ability to control.

![Figure 3: Factors Influencing Entrepreneurship](image-url)
• Each of lives is a web of connections. The decisions will shape one’s lives and the lives of individuals around us . . . furthermore, the other way around.

But perhaps the most significant reason is that to utilize our chances throughout everyday life, one should know itself, specifically, qualities and shortcomings. It should take a gander at capacities and perceive how they contrast and the individuals who may be coordinated to a similar objective. In the event that one wish to be effective and have any kind of effect on the planet, pick a zone where they have a similar favorable position and where the best can be critical regardless of how constrained the zone. For instance, at 5' 7," Pete may have little any expectation of satisfying his fantasy of turning into a football star. Be that as it may, it may have the acumen and duty to instruction to contribute altogether to the field of educating and learning. Or on the other hand it may have the innovative virtuoso and vitality to extend the limits of logical learning. In either case, it would be seeking after an enthusiasm in a reasonable style, by misusing extraordinary abilities.

Critical Factors Affecting Technological Encroachment And Entrepreneurial Innovation

Technological Encroachment and entrepreneurial Innovations in India has developed through several pathways, shaped by Government policy, the education system, and through interaction with multinationals. In India, to promote this, many Government and non-Government agencies are putting efforts to enhance the activity. Particularly, Department of Science and Technology (DST), Government of India has played a key role. Technology Innovation Management and Entrepreneurship Information Service (TIMEIS), a joint project of National Science and Entrepreneurship Development Board (NSTEDB), DST and Federation of Indian Chambers and Commerce and Industry (FICCI) is now one of the credible ladders towards the enhancement of India's entrepreneurial economy. The project has taken initiatives to provide guidance and assistance to the entrepreneurs especially the technopreneur to find technologies, projects, funding options and information about policy environment, incentive schemes and industrial infrastructure available in the country covering both the central and state government and have become proficient at tapping the local talent pool. 14 Science and Technology Entrepreneurship Park (STEP) and around 24 Technology Business Incubators (TBI) have been established which are acting as a real booster to convert Technology Innovations into Techno-Entrepreneurship in colleges and universities in India have established education and training programmes to foster entrepreneurship, Centre’s for entrepreneurial studies and business incubators, like Society for Innovation & Entrepreneurship (SINE) at the Indian Institute of Technology Bombay, in Mumbai. Ministry of Science & Technology, Government of India launched a novel programme known as Technopreneur Promotion Programme (TePP).

The success of entrepreneurship is influenced by external support (formal and informal).
Formal support comes in the form of financial, technology, and strategic partnerships (Carrier et al. 2004). Therefore, there are certain critical factors which are influencing entrepreneurial success and can be divided under two categories – Technological Encroachment Factors and Entrepreneurial Innovation Factors.

1. Technological Encroachment Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Commercial risk and feasibility</td>
<td>26%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>2. Team’s skills and competencies</td>
<td>15%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>3. Commercialisation strategy</td>
<td>10%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>4. Technical risk and feasibility</td>
<td>8%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>5. Intellectual property protection</td>
<td>5%</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>6. Technology innovation</td>
<td>5%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>7. Project champion</td>
<td>4%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>8. Project sponsor/executive support</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>9. Alignment with strategy of organisation</td>
<td>3%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>10. Investment management</td>
<td>2%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>11. Product availability at launch</td>
<td>0%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
<td>100%</td>
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**Figure 4: Critical Risk Factors for Technological Encroachment**

Source: George C. Hartmann and Mark B. Myers, “Technical Risk, Product Specifications, and Market Risk”, in Managing Technical Risk:

The critical risk factors for technological encroachment add a new dimension to business which is not the same as new products since it requires new knowledge and experience. It is technology advancement that often drives paradigm shifts, which then generate new product-market opportunities and related business challenges. While addressing customer needs is central to business and competitive success, paradigm shifts are fraught with risks associated with the actual development of new products based on technological infringement.
2. Entrepreneurial Innovation Factors

![Figure 5: Influencing factors of the Entrepreneurship for Innovation](image)

The figure 5 shows that companies relied heavily on patenting to protect their investments in R & D and prosperity to take risks in the Innovation. For innovation, the business needs must be driven. These needs act as indicators that focus on business needs and must be satisfied in order to reach a higher likelihood of commercial success. All kinds of innovations, whether they are new products, services, processes, business models, technologies or marketing, should from a business perspective be evaluated by their effect on performance i.e. reduced costs or increased revenues. Most innovations result from a conscious, purposeful search for opportunities within the company and the industry as well as the larger social and intellectual environment. A successful innovation may come from pulling together both Investment in research & development and willingness to take risks.

Impact of Technological Encroachment and Innovation on Entrepreneurship

![Figure 6: Impact of Innovation on Entrepreneurship](image)
Accelerated technological change has turned into a reality and will keep on testing industrial and cultural advancement in this new century. "Anticipating progressions is by all accounts pivotal for achievement in innovation based organizations. For Technovation, these progressions have different sides: on the one side, the Technology is an object of progress and on the opposite side, it is liable to change. As an object of progress the Innovation needs to adjust rapidly to new situations. This requires a high level of adaptability and speed of reaction on account of their constrained assets. Representatives and association must be available to new thoughts and ready to acknowledge them rapidly, in light of the fact that they can’t depend on boundless money related assets and are frequently working in little, creative specialty markets. Technological development over the world is one of the main thrusts behind efficiency advance. Nonetheless, it is difficult to contend that Technological development or its absence, in economy is a significant factor in clarifying the changes of the most recent fifty years.

The unemployment/expansion story has just the most questionable association with innovative development. Indeed, even the enormous variances in profitability and GDP per capita in respect to different nations have less to do with technological advancement, perse, and more to do with the degree to which created organizations use best practice strategies. These are, obviously, personally identified with innovation however the principal issue is more organisational than technological. What's more, the essential inquiries concern the motivating forces to use the best rehearse strategies and the hindrances against doing as such. These are, obviously, huge issues which one just talks about extraneously in what pursues. Here, concentrated on the role of technological advancement despite the fact that this was unavoidable; it leads to address how developments are utilized.

As ithas seen, the relative profitability execution of the Developed nations has improved throughout the most recent two decades especially given factor inputs. Over this period, innovation development has been among the most astounding in these nations. Making joins between learning age and venture improvement is one of the most significant difficulties confronting creating nations. There is an assortment of manners by which governments can help animate little and medium-sized ventures; for example, by supporting business and technology 'incubators', send out handling zones, and creation organizations that enable little undertakings to pool business administrations and work pools. Directed tax assessment systems and market-based instruments, and a wide assortment of methodologies for opening budgetary capital are expected to make and continue undertakings that add to practical advancement.

The activities that add to manageable improvement objectives happen on every single spatial level, going from universal structure understandings to national strategies and activity plans, to the choices and conduct of neighborhood networks, families, and people.
The moves are made by governments, business and industry, and a wide scope of common society associations. There is in this way a requirement for a wide scope of systems to advise and impact the moves made at these various levels and diverse on-screen character gatherings. For example, at the universal level, there is a need to proceed with contribution from the science and innovation networks in intergovernmental ecclesiastical gatherings, though nearby and singular level choices might be most viably educated through long-term duties to fortifying instructive educational plans and establishments. These components should advance after some time because of the developing generally plans for tackling science and technology for economical improvement.

**Conclusions**

Innovation in creating nations is tested by the absence of profound pockets (Capital), by the idea of their association as yet being inventive and by being in a quickly evolving condition. For an effective administration of technologies under these conditions, an administration framework must be reduced, adaptable and versatile. Technology and Innovation Management aims at supporting as per their entrepreneurial needs, potential outcomes and openings. To contend with bigger contenders, New Technology-Based Firms (NTBFs) must create focal points of adaptability and speed of reaction. So as to benefit from these preferences, NTBFs require innovation and development the board approach that upgrades the NTBFs' upper hands in many entrepreneurial organisations, short correspondence ways, and intelligent decisions mechanisms. Be that as it may, essentially all the exploration of innovation and development the executives have occurred in enormous firms, in this manner in another specific circumstance. Technological encroachment and Innovations assumes a significant role over the full scope of issues depicted in the past segments and is featured here in view of its basic importance to both short and long – term monetary, cultural, and ecological manageability. Technological encroachment and Innovations can be viewed as a two-fold edged sword as for maintainable improvement. There is no uncertainty that a significant part of the improvement in human welfare over the previous century can be represented by technological advancements in territories, for example, general wellbeing and agribusiness. And yet, a considerable lot of the world's basic supportability issues are unintended results of technological developments, particularly those planned for increasing production and extraction of natural resources.

The study will help the organisations to better understand the significance of entrepreneurship and the impact of technological encroachment and innovations on it. The researcher has made an attempt to identify the most prominent critical factors responsible for the success of entrepreneurship however; there were several other factors on the basis of various studies that affect the efficiency of entrepreneurs in an organisation which need to be study. This study will contribute to various industries to understand the importance of
technological advancements and innovations to be included in business for their success.

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