Are Indian Startups Technology Driven ? Investigating Potentiality of Indian Startups

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Abstract

The aspect which hinders technology driven entrepreneurship is weak intellectual property rights (IPR) protection. India was ranked second from bottom among 30 countries examined for IPR protection as per the 2015 GIPC Index of the US Chamber of Commerce. Weak IPR laws and enforcement continue to limit the ability of businesses to invest in R&D. Inadequate IPR protection could also discourage multinationals from setting up operations in India or in bringing their technology into the country. To foster innovation in terms of technology, both home-grown and imported, and to attract international partners who bring technology and global best practices, a country must have in place robust institutional and legal mechanisms to protect IPR. This needs to be prioritized by the Indian government as part of its national growth agenda to promote technology driven entrepreneurship.

To boost the startup enterprises in India along with market driven entrepreneurship, technology driven entrepreneurship has to be developed. Here in this paper an attempt was made to sincerely study startups from a technology point of view and not from the market point of view.

Keywords : **Intellectual Property Rights, potential, startups, technology**

Paper Submission Date : April 15, 2020 ; Paper Sent Back for Revision : May 10, 2020 ; Paper Acceptance Date : May 14, 2020

Opportunity identification has been much talked about in entrepreneurship literature. Entrepreneurial success is often measured in terms of a product or service which fulfills current market need. This approach is largely known as market driven entrepreneurship. However, a distinct path is adopted by technology driven ntrepreneurs, where technology is developed first (to create product and services) without ascertaining its prevalent ıarket need and it is commercialized later, 'by root or by branch' as explained by Lindblom (1959). This phenomenon f technology driven entrepreneurship renders the commercialization process exceedingly difficult for entrepreneurs 'ho largely adopt this approach. There are increased chances of trial and error during the product/service development rocess while adopting technology driven entrepreneurial route. The trial and error during product/service evelopment is termed as "Muddling Through" by Newbert, Walsh, Kirchhoff, and Chavez (2006). It has been bserved that most of the technology-intensive start-ups willingly accept the fact that no one bought their first product ecause there was no market for it (Weiblen and Chesbrough, 2015). This *muddling through* process has not been xtensively studied in the Indian context. Although, in 2016 India initiated a policy pertaining to startups, by nd large most of the startups in India adopted market driven entrepreneurship approach in contrast to technology riven entrepreneurship approach. The primary assumption here is that Indian startups typically go for market riven entrepreneurship approach because they want to match known demand with known technologies. In case of :chnology driven entrepreneurship approach, unknown demand has to be matched with unknown technologies.)verall, risk in the latter approach is high but one cannot deny greater rewards for higher risk as well. According to lewbert et al.(2006), technologies are the means and market needs are ends. Ends cannot always supersede means.

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)OI : 10.17010/amcije/2020/v3i2-3/153296

The research questions which we intend to raise here are as follows :

- Do Indians startups lean towards more market driven entrepreneurial approach?
- If yes, why don't Indian startups "Muddle Through" for technology driven entrepreneurship?
- What support can be given to technology driven entrepreneurial startups by institutions and governmental agencie during muddling through phase?
- Is technology driven entrepreneurship present in certain industries only?
- Does India need strong technology – driven entrepreneurship approach?
- Does closer proximity to markets destroy technological capabilities of startups in India?
- Are Indian entrepreneurs largely market exploiters, then market creators?

Literature Review

According to Shane and Venkatraman (2000), it is a well-known fact that most new products fail. Therefor entrepreneurship does not end with the development of new products for the first time.

A study conducted by Friederici (2019) on organizations in Africa warned that such quick and wide diffusion doe not necessarily imply that they are operating successfully. Lack of space no longer seems to be a big issue. So, mor incubating organizations as well as co-working spaces opened over time.

Business incubators and accelerators can be understood as organizations that support the foundation and growth c new businesses through different kinds of resources and services. Typically, incubators take in startups without an priori fixed time horizon and fund themselves by taking rent, while accelerators usually accept startups for fixed-term cohort-based programs, sometimes in exchange for equity(Kohler T., 2016).

Both business-incubating organizations can be distinguished between publicly and privately sponsored one While publicly sponsored incubators often are more interested in job creation and social impact, private-independen incubators emphasize profitability, and private-corporate incubators tend to focus on contributions to their mothe corporation's strategic goals(Cohen, 2013).

According to Thomke (1998), trial, failure, learning, correction and retrial represent one of the most formidabl aspects of the innovation process. Thus, it should come as no surprise that muddling through requires a significan amount of time, money, and efforts.

Research Gap

From the literature review, I decided to study certain factors like trial, failure, learning, correction, and retrial whic restrict technology driven entrepreneurship in India.

Objectives of the Study

The objectives of the study are :

- To identify the muddling through process in technology intensive start-up companies in selected areas.
- To assess constraints faced by technology driven startups in comparison to market driven start-up companies.

Research Methodology

A thorough literature survey has to be done to find out the various issues connected with such studies. A total o about 32 startups incorporated between 2015–2019 were randomly selected from the states of India covering virtuall

l forms of ownership like proprietorship, partnership, private, and public limited companies etc. and the kind of dustries included manufacturing, dyes and chemicals, pharma, electronics, IT industries etc.

To gather insights on these questions, a qualitative research design was chosen and interviews with experts nducted. To qualify as an expert, interviewees must have had significant professional experience in the Indian artup ecosystem. For the data collection, interviews were conducted in the period October 2019 to December 2019. collected data from Ahmedabad, Hyderabad, Bangalore, Mumbai, and the National Capital Region in India. Overall, 5 interview partners shared their perspectives.

Table 1 provides a comprehensive overview of the types of organizations and experts interviewed for the study. 'hile the initial focus of the study was on technology-oriented startups, opportunities to interview a few non-tech ntures emerged during the course of the study, which provided valuable insights.

Table 1. Overview of Interview Partners and Represented Organizations

nterview no.	Organization			Interview partner	
	Type	Location	Sector/Expertise	Position	Gender
	Private incubator/ accelerator with hybrid business model	National Capital Region (NCR)	Various sectors	Partner Manager operations	Male Female
	Startup	NCR	Mobile payments	Product manager	Female
	Young business	NCR	Health, nutrition	Founder	Male
	Young business	NCR	Consultancy services	Partner	Male
	Angel investor network	Mumbai	Various sectors	Manager investor Relations	Male
	Corporate incubator/accelerator	Mumbai	Telecom, media and entertainment, fintech, retail, etc.	CEO	Male
	Academic incubator/accelerator	Mumbai	Different sectors	Marketing Consultant Senior Manager	Male Male
	Angel investor network	Mumbai	Various sectors	Assistant Vice President	Male
	Startup	Mumbai	Education	Manager -Product	Female
0	Startup	Ahmedabad	Digital hospital management	Founder	Female
1	Academic incubator	Ahmedabad	Cleantech, fintech IoT, ICT, medtech, etc.	Outreach Managers Manager Business Ecosystem	Female Female
2	Industry association	Ahmedabad	Various sectors	Regional Manager	Male
3	Young business	Ahmedabad	Women hygiene	Founder	Female
4	Platform for women entrepreneurs	Ahmedabad	Various sectors	CEO	Female
5	Various organisations	Bangalore	IT	Partner and Advisor to VC Funds, Startup mentor	Male
6	State government initiative	Bangalore	IT, biotech	Head	Male
7	Private incubator/accelerator	Bangalore	Various sectors	President	Male
8	Corporate incubator/ accelerator	Bangalore	Cloud computing, IoT, big data, AI, etc.	Leader Senior Manager	Male Female
9	Business school	Bangalore	Innovation	Professor	Male
0	Startup	Bangalore	Fintech platform	Legal Advisor	Male

				Founder	Male
21	Startup	Bangalore	Consumer hardware	Founder	Male
22	Startup	Bangalore	Networking app	Founder	Female
23	Incubator/accelerator run by industry association, and	Bangalore	Mobile apps	Associate Vice President	Female
				Assistant Vice President	Female
	incubated startups		Mobility	Founder	Male
			Food specialty app	Founder	Male
			Crowd sourcing	Founder	Male
			Mobile app	Founder	Male
24	Startup	Bangalore	Education	Vice President	Female
				Founder	Male
25	Startup	Bangalore	Mobile games	Founder	Male
26	Startup	Bangalore	HR tech platform	Founder	Female
27	Private incubator/accelerator with hybrid business model	Hyderabad	Different sectors	Partner	Male
				Analyst	Male
28	Young business	Hyderabad	Health, nutrition	Founder	Female
29	Startup	Hyderabad	Networking app	Founder	Male
				Marketing Consultant	Male
30	Angel investor network	Hyderabad	Various sectors	Manager - Investor Relations	Female
31	Private incubator/accelerator	Hyderabad	IT	President	Male
32	Academic incubator	Mumbai	Innovation	Outreach Manager	Female
				Legal Advisor	Female

Findings and Discussion

To apply disruptive technology in such a way that it satisfies some market need is not an easy job (72%). On tl contrary, it often takes great deal of time and effort to find the right match. More often, it has been seen that ne and smaller firms mostly lack the resources necessary to sustain multiple recapitulations of this process, th cannot muddle through and succeed (89%). However, once muddling through in technology driven entrepreneursh is successful, the results in terms of profitability are far more rewarding as it creates new opportunities ar markets (94%). The present research has implications for both academicians and practitioners. From an academ stand point, the emerging markets are mostly looked at as market driven economies with little technological innovatic (100%). For, superior technological innovation, India is still relying heavily on the western counterparts (85% Again, the primary assumption is that policy makers, venture capitalists, and angel investors in India are large financing market driven entrepreneurial venture (64%). This discourages technology driven entrepreneurs large as muddling through process is time consuming and full of uncertainties. Nevertheless, the process of muddlir through might be exhaustive, but it is rewarding in the long term. Thus, policy makers in government have to desig a mechanism where technology driven entrepreneurs are taught to manage the process of muddling throug alerting them to resource gatekeepers that might keep their fledgling business afloat until they find a match betwee market need and technology (91%).

The aspect which hinders technology driven entrepreneurship is weak IPR protection (77%). India was ranke second from bottom among 30 countries that were examined for IPR protection as per the U.S. Chamber of Commerc (2015). Weak IPR laws and enforcement continue to limit the ability of businesses to invest in R&D (56%). Inadequat IPR protection could also discourage multinationals from setting up operations in India or in bringing their technolog into the country (42%). To foster innovation in terms of technology, both home-grown and imported, and to attra international partners who bring technology and global best practices, a country must have in place a robu

nstitutional and legal mechanism to protect IPR (100%). This needs to be prioritized by the Indian government as part f its national growth agenda to promote technology driven entrepreneurship.

.imitations of the Study

'his study covers only 32 startups which were incorporated between 2015 and 2019. So, a large number of startups are gnored here. Further, this study covers only startups from cities where startup environment is favorable. Startups from ther areas were not intended to be studied. Therefore, output of this study may not be generalized for overall startup nvironment of India.

:onclusion

'ompanies in India are increasingly reaching out to startups to increase their own innovativeness. They enter nto exchange and strategic partnerships with startups, while supporting them with various corporate-specific esources. To boost the startup enterprises in India along with market driven entrepreneurship, technology driven ntrepreneurship has to be developed. In this paper, a proposal is made to sincerely study startups from a technology oint of view and not from the market point of view. Classification of startups purely based on their muddling through fforts in the context of technology driven entrepreneurship is what we intend to study ? Only future research can nswer this question.

;cope for Further Research

'his study may be extended by including more number of startups from different regions of India to study overall nuddling through efforts in India. Instead of classification on the basis of muddling through efforts, research can be xtended to sector wise efforts for secretarial comparison. The study may also extend to comparison of muddling nrough efforts by Indian startups with startups of developed countries.

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Dr. Yashasvi Rajpara is Assistant Professor of Commerce & Accountancy at SEMCOM College managed by Charutar Vidya Mandal. He is actively engaged in research on various topics of commerce. Till now five students have completed their doctoral studies under his guidance and at present five students are pursuing their doctoral studies under his supervision. He has authored four books and edited one book. 63 research papers authored by him have been published in various journals, books, and magazines. He has served as a resource person for various workshops, seminars, conferences, and training programs on various occasions. He is a strong believer of "Learner Centric Approach" of teaching and he is well known among the student community for his active interest in student development activities.

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