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Innovation for Emerging Markets Confronting Institutional Environment Challenges: Perspectives from Visionary Leadership and Institutional Entrepreneurship

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Abstract

Emerging markets are considered to be the largest untapped markets on earth with substantial business opportunities. However, emerging markets are characterised by weak institutional context. For entrepreneurs, how to achieve innovations in emerging markets confronting the challenge of institutional environment remains largely unexplored in the literature. This research study adopted a qualitative method using case study approach. Ten (10) top level and middle level managers were sampled, contacted and interviewed from an emerging market firm (EMF). Data was analysed using qualitative content analysis. Focusing on the product innovation for India's masses with the creation of indigenous digital telecom switches by Centre for development of Telematics (C-DoT), our analysis reveal that entrepreneurs with visionary leadership can envision emerging market prospective and thereby have greater possibility of acting as institutional entrepreneurs to avoid uncertainty for emerging market innovations. Our proposed conceptual framework can be secured as a reference point by potential entrepreneurs to innovate targeting the emerging markets, and the study also contributes significantly to the theoretical literature on emerging market innovation formulating a set of propositions to advance research in this subject.

Keywords: emerging market, innovation, institutional environment, visionary leadership, institutional entrepreneurship

1. Introduction

Emerging markets or economies defined as "low–income and rapid–growth countries using economic liberalization as their primary engine of growth" (Hoskisson, Eden, Lau, & Wright, 2000) hold immense opportunities for innovators who are willing to take a 'great leap' into large untapped mass markets in these countries (Hart & Christensen, 2002; Prahalad, 2010; Prahalad & Hammond, 2002). However, emerging economies present a number of practical realities including underdeveloped institutional context, substantial income differences and highly price–performance conscious customers (Khanna & Palepu, 1997; P. K. Ray & Ray, 2010). For entrepreneurs, how to achieve innovations for emerging economies tackling the challenge of institutional environment therefore, remains a daunting challenge.

It has been widely acknowledged in the literature that institutional context or environment defines and limits entrepreneurial opportunities and therefore, entrepreneurs are both constrained and enabled by the institutional setting of their business environment (Aldrich, 1990; Bruton & Ahlstrom, 2003). In emerging economies where legal and regulatory institutions are weak, professional and commercial norms are just being established, existence of underdeveloped civil society and little role of non-governmental organisations (NGOs), entrepreneurs lack the legitimacy they need to secure resources and support from society due to the non-existent or underdeveloped institutions which are narrowly diffused (Ahlstrom, Bruton, & Yeh, 2008). Moreover, lack of functioning laws, capital deficiency and lack of physical infrastructure are also some of the constrictions experienced by entrepreneurs in emerging markets (Cavusgil, Ghauri, & Agarwal, 2002; Phillips, Tracey, & Karra, 2009). As a result, companies in emerging economies need to adapt their strategies to fit the weak institutional context for facilitating the functioning of markets (Khanna & Palepu, 1997). However, the crucial problem of how entrepreneurs can achieve innovations tackling institutional challenge in such contexts remains largely unexplored in the literature addressing in–depth empirical study.

Such a gap raises an important research question namely 'How do entrepreneurs achieve innovations in emerging markets confronting the challenge of institutional environment?' In this article, we argue that to manage institutional challenges entrepreneurs with visionary leadership can envision emerging market prospective and thereby have greater possibility of acting as institutional entrepreneurs to avoid uncertainty for emerging market innovations. In developing our arguments, we make four contributions. First, we have connected the literature on visionary leadership with relevance literature on institutional entrepreneurship in the context of emerging economies. This is an important insight that has allowed us to conceptualise that entrepreneurs with visionary leadership have better opportunity to act as institutional entrepreneurs to manage institutional challenges existing in emerging economies. Second, building on the recent insights in visionary leadership and institutional entrepreneurship, we develop a theoretical framework of achieving innovations in emerging economies confronting the challenge of institutional environment that we believe will help move work forward in this area. One of the reasons for this has been the lack of an appropriate and under-developed theoretical frame. Third, this article makes a contribution to our understanding of effective innovation processes under conditions of resource constraints in economies with weak institutional contexts and poorly developed support infrastructure for innovation. Four, we develop propositions for achieving innovations in the context of weak and highly uncertain institutional environment of the emerging economies. The set of specified propositions represent elements of the proposed conceptual framework. The study is therefore useful in terms of providing actionable knowledge that may guide practitioners to achieve innovations in the context of emerging economies.

We present our arguments in the following sections. First, we provide an overview of the literature on emerging economies and institutional challenges in that context. Second, we discuss the concepts from visionary leadership and institutional entrepreneurship that we believe are useful for achieving innovations in emerging economies to tackle the challenges of institutional environment. Following this, comprehensive case study of C-DoT is presented. Next, the case analysis and discussion is continued. Finally, the paper closes with a conclusion and highlights the theoretical, managerial implications and future research directions.

2. Literature Review

2.1 Institutional Environment and Challenges in the Context of Emerging Economies

Emerging economies are refereed to those developing countries that are achieving positive economic growth over a sustained period of time. The economic reforms in these countries are designed to address poverty and improve the living standards of their inhabitants (S Tamer Cavusgil, Ghauri, & Agarwal, 2002). According to the broad agreement among key scholars such as (S Tamer Cavusgil et al., 2002; Hoskisson et al., 2000) as well as international development agency such as World Bank (Mundial, 2001), emerging economies include the transition economies of East Asia, Central and Eastern Europe, many economies of the Middle East, Southeast Asia, Africa, Latin America and the newly independent states of the former Soviet Union. These economies are significantly important for the global economic development since approximately 75% of the world's total population lives in these countries.

The predominant socio-economic, institutional and environmental characteristics in emerging economies make innovation challenging for incumbent firms (Dawar & Chattopadhyay, 2002; Prabhu & Krishnan, 2005; Prahalad & Lieberthal, 2003). More specifically, it has been recognised in the literature that the supporting institutions which underpin emerging economies are often unstable and underdeveloped (Bruton, Ahlstrom, & Li, 2010). In general, institutions refer to self–policing conventions such as established industry norms, business practices, technological standards and industrial code of practices that simultaneously can support the endeavours of entrepreneurs through reducing risks and also can impose powerful constraints on their strategic decision-making (Douglas, 1986). The distinct institutional constraints faced by entrepreneurs operating in emerging economies pose severe challenges for them as efficient market functioning depends on supporting institutions(Douglas, 1986).For example, during the 1980s entrepreneurship in the transition economies of the former Soviet Union was highly difficult due to the protected nature of markets (Peng, 2003). Elsewhere, Broadman and colleagues (Broadman, 2004) found that economic growth in the emerging economies of Eastern Europe was impeded by the absence of effective institutions to protect property rights, enable legal enforcement of contracts and to ensure fair competition.

By and large, scholars have identified three broad categories of institutional challenges faced by entrepreneurs and firms operating in the contexts of emerging economies. These are: formal institutional constraints, informal institutional constraints and lack of physical infrastructure. Peng and Luo (2000) for example, identifies formal institutional constraints as the lack of credible regulatory frameworks such as functioning laws, legal institutions, stable political structure and strategic factor markets such as the lack of capital and skill level. Informal institutional constraints have been distinguished as the prominence of deeply embedded social networks and personalised exchanges. These formal and informal constraints often represent major barriers for entrepreneurs in emerging markets to engage in commercial activities (Peng, 2003). In addition, Cavusgil et al. (2002) argue that the lack of physical infrastructure such as telecommunications, transportation, power supplies are also some of the other institutional constraints faced by entrepreneurs in emerging markets. The profound nature of these challenges therefore results in a high degree of uncertainty and complexity for conducting business in emerging markets (Tracey & Phillips, 2011; Zahra, 1993).

Although we recognise that institutional challenges create major barriers for innovators in emerging economies, we also contend that it can create significant opportunities for some entrepreneurs. Yet, there is relatively little scholarship which considers the ways in which entrepreneurs can exploit the uncertainties resulted from institutional challenges in order to create innovations. Our aim is to build on recent developments in visionary leadership and institutional entrepreneurship to show how entrepreneurs with visionary leadership in emerging economies can also act as institutional entrepreneurs to achieve innovations in emerging economies overcoming the challenges of the poorly– developed institutional contexts.

2.2 Visionary Leadership and Institutional Entrepreneurship in Emerging Economies

In the context of institutional challenges in emerging markets, from a resource based perspective, entrepreneurs with visionary leadership can undertake decisions under conditions of great uncertainty (Foss & Ishikawa, 2007; Siqueira & Bruton, 2010). It has been described in the literature that entrepreneurs having the capability of visionary leadership possess the characteristics of being goal oriented, proactive, innovation seeking, risk taking and maintaining an effective organizational environment through communicating a shared vision (Rowe, 2001; Westley & Mintzberg, 1989). Despite being confronted by scarce resources, legal constraints and dynamic forces of competition, visionary entrepreneurs' prevail in unfavourable situations and remain steadfastly committed to their vision (Tellis, 2006; Tellis & Golder, 1996). Aligning vision with organisational strategy, they inspire people to achieve an impracticable target by innovating relentlessly and demonstrate the unique characteristics of empathy and trust building (Sashkin & Rosenbach, 1998; Tarabishy, Solomon, Fernald Jr, & Sashkin, 2005).

To broaden the role of entrepreneurship in emerging markets (Bruton, Ahlstrom et al., 2010, Tracey & Philips, 2011) suggest that entrepreneurs operating in emerging markets have the potential to act as institutional entrepreneurs by adopting strategies to exploit the uncertainties that prevail due to the formal institutional constraints such as the lack of core of regulatory institutions, legal frameworks, informal institutional constraints such as profoundly entrenched social networks and personal exchanges. Specifically, since 'institutional' denotes inertia and stability, and that 'entrepreneurship' refers to newness and change, institutional entrepreneurship thereby refers recognizing new opportunities prompting institutional change (David & Bitektine, 2009; Strang & Sine, 2002).

Scholars describe institutional entrepreneurship as the activities of actors to create new institutions or to transform existing ones having interests' in particular institutional arrangements and mobilizing/leveraging resources (Battilana 2006; Garud, Hardy, & Maguire, 2007; Leca, Battilana, & Boxenbaum, 2008; Maguire, Hardy & Lawrence, 2004; Heugens & Lander, 2009).

Institutional entrepreneurs can be individual, small or large companies and governments or non-profit organisations (Tracey & Phillips, 2011). Institutional entrepreneurs are forward thinkers who are inclined to take risks for new ventures (Perkmann & Spicer, 2007). In the context of emerging markets, individual entrepreneurs can fulfil strategic business objectives by deliberately leveraging resources to create new ventures or manipulate the institutional structures in which they are embedded. Therefore, in emerging economies entrepreneurial leaders have greater opportunity to play the role of institutional entrepreneurs for creating new institutions for improving the business environment (Bruton et al., 2010).

In this regard, Lawrence (1999) argues that institutional entrepreneurs develop institutional strategies to facilitate collective action for creating new institutional configurations. This can include actions influencing regulatory frameworks, establishing structures or processes and establishing cultural norms or values that can impact the distribution of resources and power and also set the context for competitive strategies (Lawrence, 1999). For example, Fligstein (1997) demonstrated how Jacques Delors, president of the European Union, was able to bring institutional reform, by proposing a single market among European countries. In other words, seeing opportunities in particular institutional arrangements institutional entrepreneurs mobilise resources to create new institutions or change the existing ones in accordance with the interest of potential allies such as governmental agencies or legal bodies to provide legitimacy for the institutional project (McGaughey, 2013). Institutional entrepreneurs therefore work proactively and intentionally to shape their institutional environments to avoid uncertainty (Lawrence & Phillips, 2004).

The crux of our argument thus far is that, rather than seeing the challenges of institutional environment as a barrier, entrepreneurs with the visionary leadership can envision emerging market prospective and thereby have greater possibility of acting as institutional entrepreneurs to avoid uncertainty for emerging market innovations. Summarising from the discussion based on the literature, we thereby proposes a conceptual framework of achieving innovations in emerging economies confronting the challenge of institutional environment in Figure 1.

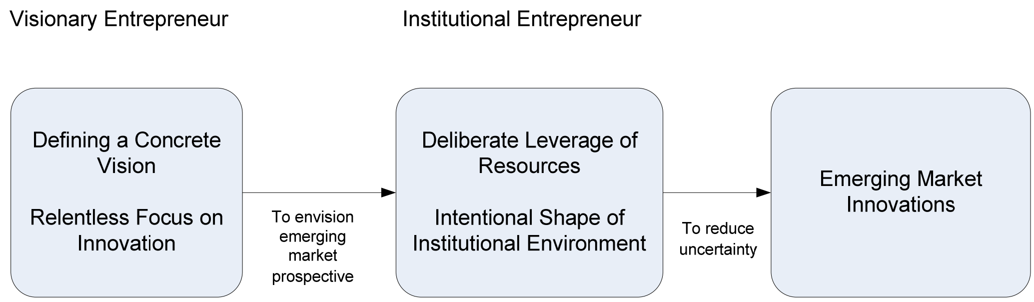

Figure 1. A conceptual framework of achieving innovations in emerging markets

3. Method

To address the research question, we adopted a case study research methodology in our empirical work. This choice was made for a number of reasons. First, following (Dyer & Wilkins, 1991; Yin, 1984), case study research strategy allowed to gain an in-depth insight of the real-life context and to obtain rich data. Second, case study approach provided a more convincing demonstration of conceptual argument and causal forces (Siggelkow, 2007; Silverman, 2010). Third, case study design also provided the potentiality to generate and new empirically testable theory due to creative insight arising from the concurrence of case evidence (Eisenhardt, 1989, Silverman, 2010).

3.1 Case Selection

Sample firm for this research study was obtained from technology intensive industry featuring low cost innovations for India and other emerging economies. To ensure the validity target the rationale for selecting the cases for this study involved a purposeful choice of firm (Miles & Huberman, 1994) that (i) provided relevant evidence to substantiate the research question and related constructs (ii) had the potential to generate rich information concerning the central research attention and thereby increase the analytical generalizability of the findings. The choice of sample firm was guided by how effectively the focal firm is addressing the unique challenges of EE innovation for mass customers highlighted by academic journals, books, trade journals and business press. The study therefore included Centre for Development of Telematics (C-DoT).

Table 1. Sample firm of this study

Firm	Establishment	Industry	Ownership	Switching Products of Empirical Focus	Major Markets Served	Achievements
C-DoT	1984	Telecommunication	Public	RAX, PABX, SBM, MAX-L, MAX-XL	Southeast Asia, Africa, Middle East	Deployed more than 30,000 digital switches totalling 25 million telephone lines in India

3.2 Data Collection Method and Data Triangulation

This research study utilised 10 semi–structured interviews with the company representatives. As recommended by case study researchers' (Klein & Myers, 1999), semi–structured interviews offered significant flexibility and opportunity to seek more interpretation or clarification from the informants asking questions that were not predefined. As a primary source of data, we conducted in–depth interviews with top managers (Executive Director, Head of Technology Transfer) and middle–level managers (Manager, Divisional Manager) visiting the company's headquarters and R&D facilities in India. Data from C-DoT data was collected over the period of 2012-2014.

In recruiting the representatives, we purposefully sought informants from different functional areas and organizational positions within the company. Each interview lasted for about 60-90 minutes and was audio recorded with the permission of the participants to aid in data transcription and data analysis. Given the qualitative nature of most of the data collected, triangulation was one of the significant ways to increase construct validity, substantiate findings and subsequent propositions (Denzin, 1978).Internal validity of the primary data was ensured by addressing observed discrepancies in the data and discussing these discrepancies with respective managers for further clarifications. As suggested by Berg and Lune (2004), reliability of the data was confirmed by providing detailed accounts of the data collection methods for replication purpose. For data triangulation, in addition to primary data from interviews, we used multiple sources of evidence in our study such as academic journals, books and company annual reports. Such documentary evidences acted as a method to cross validate information obtained from interviews.

3.3 Data Analysis Method

Data was analysed using qualitative content analysis approach which has been argued as the most effective way to ensure comprehensiveness of text material (Miles & Huberman, 1994).Computer-based content analysis method was not utilised in this study since the interviews are small-scale and in this case, computer based analysis method can reduce the originality of the material (Bazeley, 2007). As a consequence, the interview transcripts were reviewed, coded and triangulated with company documents and information from multiple sources of evidence.

4. The C-DoT Case

During 1984-1991 when India began liberalizing its economy, it had remarkably low telephone density (lines per hundred inhabitants) of 0.53 (Saha, 2004). The rural population of India representing 75% of the total population had access to only 10% of direct telephone exchange lines. With high prices and with demand surpassing the supply, few numbers of MNEs had monopolised the Indian telecommunication market (Saha, 2004). The telephone exchanges developed by MNEs were not suitable for India's tropical climate with its extreme heat, humidity and dust conditions (Venkatesan, 1994). Additionally, due to the dependence on foreign technology and equipment's, the cost of telecommunication services was beyond the reach of the India's mass population including underprivileged rural people and low income population of the Indian urban regions (P. K Ray, 2001).

In order to solve this chronic shortage, in 1984 the Department of Telecommunications founded the indigenous enterprise 'Centre for Development of Telematics' (C-DoT). The primary objective of this public sector centre was to provide telecommunications service to India's mass population (Mani, 2005). C-DoT's initial mandate was to *design* and develop digital telecom switches with high capacity for the rural masses (Pitroda, 1993, Ray and Ray 2010). In its simplest term, a telephone switch or exchange is a telecommunication system used in a telephone network to establish telephone calls between subscribers. Accepting the challenge, within a very short span of time, C-DoT successfully designed a range of innovative switching products (Mani, 2005). Telecom switching products ideally suited to India's unique socio-economic environment conditions started revolutionizing rural telecommunication in India in the form of small Rural Automatic Exchanges (RAXs) and medium size switches as SBMs for urban regions and towns. Subsequently, this was continued by higher capacity digital switches such as Main Automatic Exchanges (MAXs) such as MAX-L, MAX-XL.The appropriateness of the innovation depended on the degree of simplicity, user-friendliness in challenging Indian environment, upgradability to higher capacities and affordability (Malerba & Mani, 2009; Mani, 2005; Saha, 2004). In this way, C-DOT triggered a telecom revolution in the rural India that led the overall socio-economic development of India. Majority of the rural Indian villages gained access to a whole new world of opportunities as they got connected globally.

The leading force behind this novel initiative of C-DoT was Sam Pitroda – an inspired self-made technocrat driven by the vision of improving India's telecommunications infrastructure so that the poor could participate in the market. Pitroda described his vision as:

"In my case that challenge was to use telecommunications as an agent of change- a bridge between the First

world and the Third"..... I wanted to set India on the path to universal telephone accessibility" (Pitroda, 1993).

Winning the support of the Prime Minister of India, Pitroda convinced Indian officials that India had a pool of technically sound and capable scientists and engineers to develop an entire telecom switching technology without the need of depending on dominant foreign suppliers. Overcoming ostensibly impossible hurdles of the Indian political environment and bureaucracy, Pitroda who was appointed as Principal Advisor to C-DoT pressed on with development of a digital switching system which would be suitable for the Indian mass market requirements and network conditions. C-DoT was allocated with $36 million for 36 months from the Indian government(Ghoshal, Piramal, & Budhiraja, 2002). Compared to the complexity and the volume of tasks involved, the allocated resources of financial capital and time frame were outrageously insufficient. It is worth mentioning at this point that, for designing an entire digital switching technology, global MNEs of the telecommunication industry required significantly higher budgetary amount and timeline. (Pitroda, 1993; P. K. Ray & Ray, 2010; Saha, 2004). In the midst of this extreme resource constraints, with his innate talent Pitroda selected a number of technically sound and hardworking Indian engineers to develop reliable, modern and less costly digital switching technology which would be suitable for India's socio-economic conditions. Director of C-Dot switching department, thus described:

"In 1985, a completely new style of management was introduced by Pitroda's vision and leadership. To create an organization and a manpower resource capable of developing a set of switching systems, Pitroda rightfully selected talented young engineers which is our biggest strengths so far as in technical aspects".

Pitroda motivated brilliant engineers to join C-DoT and inspired a whole generation:

"I knew India had great young engineers and I believed there was nothing they couldn't accomplish if we challenged them and gave them a proper environment to work in" (Pitroda, 1993).

Pitroda believed that the creativity of the engineers could be harnessed by emulating collaboration based atmosphere, which is based on teamwork, flexibility, simplicity, openness and free of bureaucracy and hierarchy. In the own words of Executive Director of C-DoT:

"*Sam Pitroda created an open, non-hierarchical and egalitarian culture within the organization. C-DoT, as it is today, is very uniquely different from many other Indian organizations".*

Embracing the resource constraints, C-DoT successfully developed a 128 line rural automatic exchange (RAX) with an up-gradation capacity to 512, 10,000 lines in a record time of 4 years in the history of the telecommunication innovation (Ghoshal et al., 2002).

At present, more than 50% of the telephone fixed line infrastructure of India, is designed and developed by C-DOT. Furthermore, in addition of developing digital switching systems, C-DOT has designed and developed wireless, optical, satellite and next generation network technologies along with telecom software solutions. In this way, C-Dot has progressed as a competitive player the international telecommunication landscape.

5. Discussion

We now return to the question 'How do entrepreneurs achieve innovations in emerging markets confronting the challenge of institutional environment? From the case description of C-DoT it is unequivocal that the vision and entrepreneurial leadership of Sam Pitroda illustrates tremendous risk taking fortitude to take on the low cost innovation challenge. In contrast to the handful of MNEs who were not enthused about providing telecommunication service to the rural mass population, Pitroda attracted and retained talent to develop an entirely new digital switching technology for India's masses. With meagre resources, limited financial incentives for staff, and an institutional environment of bureaucracy limiting creative expression and solely relying on foreign suppliers, only a visionary entrepreneur could encourage engineers to create an organizational culture of innovation. The visionary leadership of Pitroda thus enabled talented scientists and engineers to innovate an entire range of switching technology in the shortest possible time. This eventually generated a telecom revolution in India paving India's overall socio-economic development.

From a resource based perspective, entrepreneurship is characterized by the exercise of judgment, defined as decision making under conditions of uncertainty (Foss & Ishikawa, 2007; Siqueira & Bruton, 2010). Entrepreneurs create value by making judgments about the optimal combination of resources. Visionary leaders, despite being confronted by technological change, scarce resources, legal constraints and various other forces of competition remain undaunted and steadfastly committed to their goals (Tellis, 2006; Tellis & Golder, 1996). Pitroda's commitment to bringing about a telecom revolution fashioned an innovative and collaborative atmosphere in C-DoT. This inspired engineers working on relentlessly to meet the challenger of low cost innovation for Indian mass markets and also fostered a collaborative work environment which was free of bureaucracy and hierarchy.

In the context of innovation for emerging economies, entrepreneurs have greater opportunity to act as institutional entrepreneurs for improving the business environment (Bruton et al., 2010). Foreseeing business opportunities, institutional entrepreneurs fulfil strategic business objectives by deliberately leveraging resources to create new ventures or manipulate the existing institutional structures in which they are embedded (Dorado, 2005; Lawrence, 1999; Tracey & Phillips, 2011). Institutional entrepreneurs work proactively (Lawrence & Phillips, 2004) and intentionally to shape their institutional environment forming alliances with governmental agencies or legal bodies (Aldrich & Fiol, 1994; DiMaggio, 1988; Garud, Jain, & Kumaraswamy, 2002). This is evident from the case of C-DoT that, winning the support of the Prime Minister of India, Pitroda convinced Indian officials that without depending on foreign suppliers, India is capable of developing an entire telecom switching technology on her own. Using reputation and forming alliances with government policymakers, Pitroda mobilized resources from the Indian government to indigenously develop a digital switching system which would be suitable and affordable for mass customer requirements and Indian network conditions.

Given the unique institutional context and the salience of government regulations, our results therefore highlight the critical role of visionary leadership and institutional entrepreneurship for achieving innovations especially in the context of weak and highly uncertain institutional environment of the emerging markets. Based on the case evidence and analysis, it is now possible to specify the following propositions:

Proposition 1. More the visionary leadership that the emerging market entrepreneurs will have, better will be the possibility of emerging market innovations.

Proposition 2. More the emerging market entrepreneurs' act as institutional entrepreneurs, better will be possibility of emerging market innovations.

Although C-DoT being a public sector institution, this case offers significant lessons for managers of private enterprises, aiming to develop innovations for the masses. In addition, the lessons from C-DoT case can be utilized by firms having resource abundance through a thoughtful restriction on resources.

6. Conclusion

This paper makes a number of theoretical and managerial contributions. The theoretical contributions from this paper are in four aspects. First, now we understand that while the higher degree of uncertainty and complexity that result from the institutional challenges in emerging economies often act as barriers to entrepreneurship, the institutional constraints can also provide important opportunities for innovations. Second, building on insights from the recent developments in visionary leadership and institutional entrepreneurship, this paper adds to existing literature by developing a theoretical framework for understanding how entrepreneurs can achieve emerging market innovations. Third, this paper has demonstrated that in emerging markets entrepreneurs with visionary leadership have greater possibilities to act as institutional entrepreneurs to deal with institutional challenges and thereby develop innovations. We hope that this will encourage more research and thinking in this important area. Four, in this study we have developed propositions for achieving innovations in the context of weak and highly uncertain institutional environment of the emerging economies. The set of specified propositions represent elements of the proposed conceptual framework to advance research in this subject.

This study has significant implications for entrepreneurial managers of aspiring firms intending to serve emerging markets. Since this is a case study research, all the lessons may not be generalized; nevertheless, the insights do provide lessons for firms doing business in India and other emerging markets. The managerial contributions from this paper can be seen in two aspects. First, emerging market entrepreneurial managers require a concrete vision aligning with innovation strategy to achieve better emerging market innovation potential. Second, as observed from this study, to turn institutional barriers into opportunities for achieving innovations, entrepreneurs should act as institutional entrepreneurs to reduce institutional uncertainty and deliberately mobilize resources.

One limitation of this study is that it has investigated C-DoT which is a publicly funded technology development centre of India. Further research investigating more firms from both public and private sector from India and other emerging economies would have given more insight into the effective innovation processes in economies with weak institutional context

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