Barriers to Innovation in Post-Outsourcing Firms in Information Technology Industry

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Abstract—At the turn of the twenty-first century, discourse on outsourcing has been shifted from production capabilities to innovation capabilities. Known as one of the outsourcing powerhouses of the world, India has so far come across a unique transition from production to innovation. However, the transformation was yet complete. This study aimed to explore barriers to innovation among Indian post-outsourcing firms in information technology industry. Through interpretivst lens, qualitative research technique was adopted, and cultural dimension and organizational culture theirs were employed to explore the transitional stage. The findings showed that national culture, business environment, endangered social capital, intolerance of failure and risk aversion, and hierarchy and social order were altogether were the blockades. Nevertheless, this problem was transitory since new generation with more open work values have entered the industry.

Index Terms—Innovation, information technology, India, outsourcing, organizational culture.

I. INTRODUCTION

INDIA, a very top outsourcing destination country, has greatly benefited from technological technology and knowledge spillovers which could ultimately ignite innovation as India has globally attracted a large array of companies in various industries, especially those IT-enabled. An influx of multinational companies has not only contributed to India's economic growth, but also the spillovers. However, while such spillovers could be absorbed, innovation is more of sustainability of creation than merely absorption.

Originated in the 1950s, outsourcing began to receive intense attentions from corporate world three decades ago. Outsourcing has been recognized as one of the most disruptive industrial paradigm shift of the century since it transformed global business practices [1] as it reduced cost, improved production efficiency, and therefore increased the business baseline [2]. Outsourcing referred to a transfer of manufacturing or business processes to external parties though sub-contractual agreement [3-5] which has been widely adopted by a variety of industries [6-8].

India, along with China, has become an outsourcing heaven since Indian government relaxed control on certain

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economic sectors through deregulation and privatization in the early 1980s. As a result, Indian has attracted countless of large multinational corporations from all over the world such as GE, HP 3M, Boeing, etc., especially the companies in high tech industries. Consequently, the capital and technology spillovers have contributed to the economic and technological growths [5, 9-15]. Many empirical studies have shown that the spillovers raised national welfare by increasing the volume and efficiency of investment through improved competitiveness, technological diffusion, accelerated spillover effects and the accumulation of human capital [13, 16-24]. So far, Indian information technology companies have grown out from being outsourcing firms and become innovative such as Infosys, Tata, Wipro, CSC, etc.

At the turn of the twenty-first century, the discourse on outsourcing firms has however shifted to innovation capabilities, for it was the source of competitive advantage. Since the 1980's, the markets have been unified and become increasingly competitive; therefore, companies were inevitably focused on their business strategies and innovation in order to survive and compete [25]. Besides, the pressure from increasing costs, pressing delivery time, and complex technology has added new dimensions of necessity for firms to innovate [26].

Although technology spillovers have helped India to enjoy knowledge transfer and absorption, fostering creativity and innovation is another story. This study was to identifier cultural characteristics that contributed or barricaded innovation in Indian post-outsourcing firms in IT sector.

II. LITERATURE REVIEW

A. Organizational Culture

Culture was nebulously defined by many social scientists. Culture can be illustrated as an invisible body of an iceberg with components of intrinsic values [27]. However, Hofstede defined culture as a "collective programing of the mind which distinguishes the members of one group or category of people from another (p. 25)" [28] while Robbins and Langton [29] argue that culture delivers an aggregation of common mentality and values that were shared and compel individuals to pursue certain causes. In organizational world, culture is a unified set of belief and assumption strong that instilled and roots in an organization [27], hence internal integration and coordination [30].

Moreover, culture can be influenced particular historical phenomena and in turn having an impact upon the culture itself. Based on Keesing's work [31], Allaire and Firsirotu [32] argued that culture, in historical-diffusionist view, was

"consisting of temporal, interactive, super-organic and autonomous configurations or forms produced by historical circumstance (p. 197)." In other words, culture was historical and longitudinal in nature. Based on Malinoski's work [33], Allaire and Firsirotu [32] argued that culture is "an instrumental apparatus by which a person is put in a better position to cope with the concrete specific problems faced in the course of need satisfaction (p. 197)."

Perhaps, Schein's functionalist view is the most recognized organizational framework to study organizational culture phenomenon. Schein [34, 35] identified that culture was a combination of artifacts, values, and assumptions. Artifacts are visible organizational practices, process, and structure whereas value represented strategic justification that serve underlying assumption which was in fact a set of belief and spirit subconsciously residing individuals [34]. In addition, Schein argue that actual organizational culture is truly reflected from the underlying assumption layer.

The theory has been widely adopted in information system studies. Among those were an empirical examination of the influence of organizational culture on knowledge management practices [36], information systems success in the context of different corporate cultural types [37], the inertial impact of culture on it implementation, the relationship between organizational culture and the deployment of systems development methodologies [38], organizational culture and advanced manufacturing technology implementation [39], the impact of organizational culture on time-based manufacturing and performance [40], just to name a few.
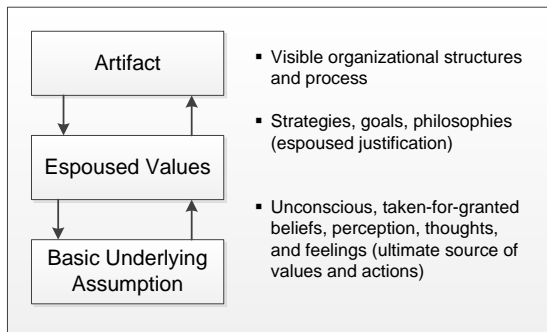

Fig. 1. Schein's three layers of organizational culture.

B. Creativity and Innovation

A large body of contemporary innovation studies has concentrated on capacity of the firm to better apprehend the development of innovation in the firm [41-48]. Many studies have confirmed the interplays between innovation and organizational performance in technology improvement [49-53], process development [54, 55], productivity [50, 51, 53, 56-60], economic growth [51, 54, 56, 59, 61, 62], and knowledge management [49, 55]. In addition, nurturing of organizational innovation is quite elusive [63-67] because of its complex and multi-dimensional nature [68-73].

Often cited interchangeably, innovation and creativity have overlapped and shared common characteristics [74]. Creativity takes place when a unprecedented method of working is invented [75] or a new valuable idea is generated [76] whereas innovation is a collection of processes of transforming a creativity into implemented commercializable

product or service [77]. In other words, creativity is a dispensable subset of innovation [78, 79].

James et al. [80] argued that individual's intrinsic motivation was adequate to ignite innovation, but it also needed leadership and managerial apparatus to drive the innovation. McLean [76] accentuated the importance of courageous working climate that positively contributed towards organizational innovation such as sufficient resource [81], encouragement from peers [74, 82-84], support from the management [74, 75, 77, 84-86], relaxing of control [74, 75, 81, 84, 85, 87], and independency [75].

C. Organizational Culture and Innovation

Culture was one of the influencing factors that contribute to organizational innovation since it was capable of "molding" employee's attitude and behavior into motivation to innovate [29, 86, 88-96]. The key success of organizational innovation heavily depended on organizational culture [96]. According to Martins and Terblanche [97], innovation and creativity were made possible by certain organizational cultural factors in two facets: bottom-up organizational socialization process [98] and institutionalization of underlying shared mental model [99].

Hurley & Hult [100] found the connection between cultural characteristics and innovation behaviors in a variety of business processes such as marketing, collaboration, communication, conflict management, and decision making. Furnham & Gunter [30] argued that organizational culture unifies and migrated the mentalities of employees to the common, shared goal and direction.

III. METHODOLOGY

A. Theoretical Perspective

This research employed an interpretivist view of inquiry to study the phenomenon. The assumption of interpretivist epistemological perspective was that human knowledge was obtained through a combination of cultural artifacts, and it was used for create social theorization [101].

According to Glynn [79], the transitional stage from individual intelligence to organizational innovation was situated upon certain individual and organizational contexts: motivation, personality, expectation, task's novelty and challenge, innovation orientation, structure, technology, learning, and problem novelty & challenge. The transition was captured to draw the basic underlying assumption about innovation mindset along indigenous cultural framework [102, 103]. In this regard, the basic underlying assumption was in fact the source of organizational culture [34, 35, 104], and therefore there were links between organizational culture on organizational attitudes and change [88, 105-107], hence innovation attitude. Toward the data analysis and the conclusion, the barriers to innovation were explored and discussed.

B. Data Collection

Sixteen senior executives in post-outsourcing high tech companies in India were interviewed with semi-structured questions. Qualitative interview enabled investigators to

access to the phenomenon studied with the subjects through their perspective and experience [108]. The semi structured interview questions were flexible enough to allow new themes and information discovery to emerge.

The interviews were conducted at the participant sites, and electronic communication, e-mail, was used to follow up with certain questions needed more clarification. All of the subjects had been working for outsource companies and/or multinational companies in a variety of industries such as information technology, aerospace, pharmaceutical, consulting, etc. Moreover, the subjects had witnessed socio-economic changes in nature of outsourced and multinational companies had evolved and grown out to be, if not so, innovation over the last decade.

C. Data Analysis

Data analysis was guided by Schein's organizational culture theory [34] and Glynn's conceptual framework [79]. Data were analyzed using theoretical technique and open-coding technique to analyze and discover the findings. In so doing, collecting, noticing, and analyzing were recursively exercise, and these activities are at the heart of qualitative data analysis [109]. Moreover, content analysis was employed to facilitate the coding and the summarizing the data. In addition, content analysis practice and procedure in detail are found in [110-114].

IV. BARRIERS TO INNOVATION

A. National Culture

Hofstede [103] argued that culture was "the collective programming of mind which distinguishes the members of one group or category of people from another (p. 260)," and compartmentalized culture into four dimensions which were power distance (PD), individualism (IDV), uncertainty avoidance (UA), and masculinity (MAS). Hofstede explained each dimension as follows:

IDV: *"The degree of interdependence a society maintains among its members"*
PD: *"The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally"*
MAS: *"What motivates people, wanting to be the best (masculine) or liking what you do (feminine)"*
UA: *"The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these"*

In comparison with United States, India scored 77 on PD, 56 on MAS, 48 on IDV, and 40 on UA, according to Hofstede's Country Comparison [102]. Compared with the United States, First, India was highly structure, hierarchical, and preserving of social order. Members of the society strictly assumed roles and responsibilities assigned. Second, Indians wanted to be the best at what they did, so they would put time and effort as much as they could in order to thrive personally and professionally. Third, India relatively was a collectivist society that valued group cohesion and caring over individual success and competitiveness. Forth, Indians circumvented dealing with unprecedented problems or new ideas.

B. Business Environment

Business environment in the context of this study referred to the way that outsourced firms in India operated. India had been an outsourcing destination for almost decades, and the majority of Indian IT vendor arranged their operations and business in a way that they could best serve their client's orders. Vendor employee's job descriptions and responsibilities were strictly designed to only fulfill the specifications.

"Business environment in the way that business is conducted. I face a command and control environment from the leadership perspective."
Tony, an IT vendor executive

As a result, there was no room for an individual creativity to emerge.

"Indian firms tend to emphasize documentation and processes to reduce ambiguity; other locations on the other hand tend to have a free flow environment without as much process."
Tony, an IT vendor executive

India vendors had been treated as outsourced facilities established to serve client's specific needs. Thus, some of indigenous vendors were having problem realizing their long-term goal and mission. This tricked them into failing to actualize their full potential organic growth. Unfortunately, the employees immersed themselves wholly in this context.

"There is a mindset challenge. The perception of the Indian team members that he or she is raw and unsophisticated."
Nathan, an IT vendor executive

C. Endangered Social Capital

As for Indian workforce, working in an outsourced vendor was considered insured. Therefore, the workforce mobility was high since everybody was always looking for a more secured job that gave him or her career development. Such situation prevented employees from established trust, relationship, collaboration, and thus knowledge sharing. Once they quit their job, the work (tacit) knowledge just walked out the door with them, hence corporate memory loss.

"Longevity in a job is very low in India compared to other areas. Indian workers have a lack of trust in getting just the basics to survive is here is tough and this lack of trust tends to reduce the sharing that happens from Indian team members."
Kathy, an IT vendor executive

"[Our] staff turnover averages 27-28%. This leads team members to feel that they are back office only and the buffers in place perpetuate this feeling."

Jimmy, an IT vendor executive

D. Intolerance of Failure and Risk Aversion

In the western world, most of scientific discoveries, inventions, and research were made possible by learning from countless failures. However, Indian society had different opinion. Failure was the label, and most of the Indian would rather shy away from it than learn from it. Moreover, certain new areas could not be taught through training, but only through trial and error.

"Here, failure isn't seen as the first step toward success. [We] don't have the subject matter skills needed to provide mentoring to wannabe entrepreneurs."

Laura, an IT executive

Therefore, a common innovation model could not apply to certain Indian firms as it was considered as a risk that might cause production and capital loss.

"Unfortunately, innovations such as this are often difficult due to the ecosystem where managers of enterprises and owners of money are two different groups - the stock market and its emphasis on quarterly results constrains truly unique offerings, and makes risk taking less attractive."

Wisa, an IT executive

E. Hierarchy and Social Order

It was important for generating new ideas and brainstorming to get everybody's voice heard. Unfortunately, it did not work that way in particular culture where social hierarchy was placed in between people different social status. As India has modernized, social class system however was still "out there" and carried on to work settings. This could be perceived as a treat to open communication, collaboration, and thus innovation.

"[The] junior workers are not comfortable speaking against the boss or of voicing their own opinions, in general. [I] see that some in the IT industry are breaking this habit as the industry matures."

Chandra, an IT executive

Apart from social class system, British Imperialist mentality residual was still present in the older generation workforce. However, the younger generations seemed not to subscribe.

The traditional influence of the British "Bapu (Babu) culture" which governed the approach Indians took to westerners. Roughly translated to "sir." the Bapu culture created a sense of obedience and has been the bane of previous generations. [I] believe that the current younger generations are less influenced by this, but [I]

see the strains that this approach leaves in the workforce."

Sandeep, an IT executive

V. DISCUSSION AND CONCLUSION

Barriers to innovation among IT outsourcing firms in India lied in basic organizational and individual assumption that constituted organizational culture in the firms. It was found that national culture, business environment, endangered social capital, intolerance of failure and risk aversion, and hierarchy and social order were altogether a major impediment to individual creativity and organizational innovation. The national culture permeated the Indian firms and thus the workforce; the high power distance was linked to the fact that hierarchy and social order was absorbed and carried out in workplace. In this regards, sharing ideas in a bottom-up approach was a discomfort and therefore discouraging. Any new idea proposed could turn out a disaster if the idea was unsuccessful, for Indian society had little tolerance for failure while failure was acceptable as part of innovation journey through trial and error the western world. Innovate could not take place in risk-averse atmosphere.

Moreover, the nature of outsourcing business environment fosters "made-to-order" mentality that the firm and its workforce had cherished for decades. Therefore, creativity seemed not belonging in such environment while the workforce felt that their routinized jobs could not make their career development. Many employees decided to pursue a better career opportunity. They left the company with tacit knowledge and went back to the job market. It was a corporate memory loss for the firm, the memory that was necessary for R&D and innovation.

However, good news was India's socio-economic paradigm has gradually shifted as news generations with new, open work values joined the industry. Tata group, for example, was the proof that innovation culture already took place in India, so soon many to come.

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