

Innovation Objectives, Strategies and Firm Performance: A Study of Emerging Market Firms

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1 Introduction

The ability of a firm to generate continuous innovations is considered to be a source of sustainable competitive advantage (Dess and Picken 2000; Tushman and O'Reilly 1996). Firms which innovate continuously are able to mitigate the negative effects of environmental uncertainty and complexity (Tsai et al. 2009; Li et al. 2008) and generate superior firm performance (Yam et al. 2011; Tsai and Tsai 2010).

The extant research on innovation has so far focussed majorly on the developed markets, and limited research is available on emerging markets (Guan et al. 2009). The environment in which emerging market firms operate is very different from that encountered by firms in developed markets (Tsai et al. 2009; Li et al. 2008). Emerging markets are characterised by higher uncertainty and complexity on account of environmental factors like regulation, institutional voids, varying and diverse consumer demand, rapid rate of technology change, intense competition, etc. (Tsai and Tsai 2010; Li et al. 2008). Various innovation management theories applicable in developed markets may not be applicable as such in the emerging markets (Guan et al. 2009; Li et al. 2008).

The environmental context of a firm decides the primary strategic objectives of the firms (Tidd 2001). These strategic objectives often require creation of value, which can be achieved by pursuing innovation activities in the firm (Chesbrough 2008). The strategic objectives which trigger the innovation process in the organisation are referred to as innovation objectives (Leiponen and Helfat 2010). The innovation objectives of the firm define the innovation strategy to be pursued by the firm in order to achieve the desired innovation performance (Guan et al. 2009; Burgelman et al. 2004).

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Emerging market firms are characterised by increasing competition on account of deregulation leading to surge of multinational corporations along with birth of new firms in industries (Girma et al. 2009). The combined effect of MNCs and new domestic players is the rise in technological intensity, complexity and uncertainty in the market (Barrell and Pain 1997). On one hand, increasing consumer demand has increased the growth potential, and on the other, customers are demanding customised products and services (Woertera and Roper 2010). Firms are continuously pressurised to reduce costs as well as offer differentiated products (Guan et al. 2009). The dynamics of the emerging markets have forced firms to adopt multiple innovation objectives (Guan et al. 2009; Song et al. 2005).

Pursuing specific innovation objectives requires specific innovation strategy which allocates resources and channelises process and system controls (Constantine and Marianne 2009; Burgelman et al. 2004). Each innovation objective requires different sets of resource allocation and control systems to achieve the desired results (Moshe 2010; Voss et al. 2008; Sanchez 1995). Firms which pursue multiple objectives have a difficult and complex task at hand as it requires not only allocating resources but also coordinating resources across these innovation objectives (Constantine and Marianne 2009; Teece 2007; Wang and Ahmed 2007). This can be achieved by adopting suitable strategy which facilitates the firms to achieve the desired set of innovation objectives (Moshe 2010; Burgelman et al. 2004).

Extant research however remains silent on the interrelationship between the various innovation objectives pursued by the firm. The focus of this chapter is to analyse the relationships between the various innovation objectives and the innovation strategies pursued by the firm. Firms need to make certain trade-offs in the portfolio of their innovation objectives based on the choice of innovation strategy. Each innovation strategy can be identified with a basket of favourable and unfavourable innovation objectives. Firms can accordingly make trade-offs amongst the innovation objectives and choose the innovation strategy with the most favourable basket of objectives. We also analyse the impact of each innovation strategy on the innovation performance of the firm so as to enable firms to decide on a suitable basket to achieve desired results.

2 Theory

2.1 *Innovation Objectives*

Research has identified numerous innovation objectives; however, based on our literature survey, emerging market context and our discussions with practitioners, we have identified a set of 14 innovation objectives. The innovation objectives and their relationship with innovation are described briefly in this section:

1. Develop radically innovative product: Based on the Schumpeterian rents, radical or discontinuous innovations change the market structure and bring

about paradigm shifts in the industry technological cycle (Rehman et al. 2010; Hill and Rothaermel 2003).

2. Introduce niche products or technology: Instead of competing head-on with the market leaders, firms chose to enter the market by focussing on a specific niche segment. The niche segment offers low competition and higher rents (Parrish et al. 2006).
3. Improve production processes for existing products: Firms competing in extremely competitive markets, where dominant design has already been established, are tight pressed to reduce the costs of products. Improvement of production processes results in increased cost efficiencies (Utterback and Abernathy 1975).
4. Replace products being phased out: Firms need to continuously innovate to not only innovate and launch new products but also phase out old products and provide improved substitutes for the earlier products. Cannibalisation or creative destruction of old products is a necessary condition for firms to achieve competitive advantage (Guan et al. 2009; Chesbrough 2008).
5. Maintain or increase market share: Firms continuously strive to increase the market share, for which they perform a combination of product, process and business model innovations. The combination of the three allows firms to capture superior market share by offering differentiated, unique, cost-efficient and accessible products and services (Dess and Picken 2000; Tushman and O'Reilly 1996).
6. Exploit new domestic market: Firms continuously perform market innovations to develop and exploit new domestic markets. The frugal innovations and bottom of the pyramid approach have specifically focussed on developing new domestic markets (Eyring et al. 2011; Wang and Ahmed 2007).
7. Exploit new international market: Domestic market firms which were basically confined to domestic markets have started exploiting other emerging markets for increasing their sales. This requires customising products and services to suit the new international market requirement (Tolstoy and Agndal 2010; O'Cass and Weerawardena 2009).
8. Improve product quality: Increased technologies and production techniques have resulted in higher product quality demands. Organisations in order to stay in competition not only need to bring out new products but also improve the quality of old products and services (Prajogo and Sohal 2003).
9. Improve existing technology to reduce reliance on imported equipment/know-how: Domestic firms have been dependent on external licensed technology from international organisations. Post-deregulation the same technology partners have started competing with the domestic firms. The domestic firms need to develop in-house technology development capabilities so as to reduce their overdependence on external technologies (Jones et al. 2001).
10. Reduce consumption of raw materials: Raw material cost is an important component of the overall product costs. Firms need to continuously innovate and look for processes and materials which can reduce their raw material costs (Tomovic et al. 2010).

11. Reduce energy consumption: Energy consumption is one of the major costs in all organisations. Developing market firms are specifically starved on power supply and many times buy costly power from secondary sources. The energy consumption accordingly becomes an important component of the cost. Firms need to develop processes to reduce the energy consumptions (Johnstone et al. 2010).
12. Improve working conditions: Lately, organisations have started realising the importance of human resource in overall firm growth. Employee retention and motivation is one of the major issues in technology- and knowledge-based firms. Firms must continuously innovate to improve the working conditions of the employees (Antoncic and Antoncic 2011).
13. Reduce production cost: Production cost is another important cost which impacts the overall cost of the product especially in the manufacturing sectors. Firms need to continuously look for available options of reducing the production costs. Firms innovate to design superior production machinery to reduce the production costs (Tomovic et al. 2010; Utterback and Abernathy 1975).
14. Partner with Value Net members for increasing WTP: Firms use their innovation capabilities to partner with superior Value Net partners so as to achieve long-term gains. It is seen that innovation networks usually allow innovating members only to join the network. Membership of a particular innovation network results in long-term technology agreements and knowledge transfers (Esteve and Ramon 2010; Nieto and Santamaría 2010).

Objectives 1 and 2 are in line with the firm goal of extending its existing product range through innovation. Objectives 5, 6 and 7 are measures of increasing sales and market share through innovation. Objectives 10, 11 and 13 majorly focus on cost-cutting exercise. Objective 9 reflects the situation of most Indian firms during the 1990s, whereby they had to spend a lot of money to acquire new equipment or know-how from developed countries.

2.2 Innovation Strategy

Miles and Snow (1978) in their book have identified four broad strategies for innovating firms Defender, Prospector, Analyzer and Reactor. However, based on our qualitative study and review of existing literature on emerging markets, we have identified five broad innovation strategies adopted by firms (Guan et al. 2009). The five innovation strategies are briefly described below:

1. Innovation leader: Maintains technological leadership and is majorly focussed on risk-taking in new products and new markets.
2. Cost-efficient follower: Monitors the actions of leaders with a more cost-efficient product.
3. Imitator: Majorly focussed on imitating technologies, products and processes of innovation leader.

4. Technology importer: The core of its innovation lies at importing technologies from advanced countries and incorporating them in indigenised products.
5. Laggard: Lags in innovation and majorly focussed on protecting its existing products and markets by incremental innovations and cost reductions.

2.3 Innovation Performance

Innovation performance is an integration of exploration (opportunity-seeking activities) and exploitation (advantage-seeking activities) output of the firms (Constantine and Marianne 2009; Lawson and Samson 2001). Innovating firms need to maintain a balance between the exploration and exploitation (Zhou and Wu 2010). Exploitation can be broadly defined as the refinement and extension of existing competences and technologies and generation of immediate predictable returns (Moshe 2010; Zhou and Wu 2010). Exploitation on the other hand deals with experimentation with new alternatives and scanning, identification and seizing of new opportunities (Moshe 2010; Zhou and Wu 2010). The firms not only need to focus on Ricardian rents which are generated from exploitation activities and can be measured by the current and past performance of the organisation but also on the Schumpeterian rents (Chesbrough 2008). Schumpeterian rents are generated from the exploration activities of the firm and involve creating value from radical and discontinuous changes (Chesbrough 2008). We thus need to focus not only on the past and current performance of the firm but also obtain insights on the future performance potential of the firm.

The innovation performance has been measured using the following three measures (Hope 2009; Combs et al. 2005; Lawson and Samson 2001):

- (a) The firm's relative performance to the innovation leader in the particular industry of the firm's operations. This is considered as a measure of the exploitation or the advantage-seeking behaviour of the firm, as it reflects the current innovation position of the firm.
- (b) Impact of firm's innovative capability and initiatives on the last 3 years' sales and revenue generated by the firm. This is considered as a second measure of the exploitation or the advantage-seeking behaviour of the firm; it explores the exploitation of the innovation capability to generate revenue from the innovation outputs of the firm.
- (c) Firm's planned current initiatives in generating innovative capabilities and output for the future performance of the firm. The measure specifically reflects the exploration and opportunity-seeking behaviour of the organisation.

The innovation performance parameters are thus selected so as to measure the balance between the exploration and exploitation capabilities of the firm and the innovation objectives and strategies which specifically lead to exploration and exploitation in a firm.

3 Methodology

The interrelationship between various innovation-influencing factors was measured using a combination of qualitative (Barr 2004) and quantitative techniques (Slater and Atuahene-Gima 2004). We performed our study in two stages (Harrigan 2009). The first stage consisted of a qualitative study where we interviewed five senior managers of an Indian multinational firm operating in a technology-intensive industry (Barr 2004). The insights obtained from the senior managers regarding innovation objectives and innovation strategy trends in the market were linked to the literature review performed by the authors. The combined conceptual model developed based on the inputs from the literature review and qualitative study was used as an input for the second stage of the study.

The second stage of the study included the quantitative analysis using an online questionnaire (Simsek et al. 2005; Slater and Atuahene-Gima 2004). The questionnaire consisted of one question for each of the parameters of our study which has been identified before (Guan et al. 2009). The empirical testing and questionnaire-based methodology were used specifically to test the interrelationship amongst the various factors and the relative importance of each of these factors and their contribution to the final innovation capability and performance of the firm.

The questionnaire consisted of three parts: the innovation objectives, the innovation strategies and the innovation performance. The questionnaire was initially pilot tested in two Indian large-scale enterprises, and the feedback received on understanding and clarity was used to refine the questionnaire before final distribution. The sample consisted of Indian firms which have been incorporated in India before liberalisation, i.e. firms which have seen the pre-liberalisation environment and which have faced the challenges of the transformation. The multinational firms selected for study were those which had operations in India, and at least some percentage of value-adding activity in their final product or service was performed in India.

The questions in the questionnaire were objective type, and all questions were made compulsory. The respondent had to select one option out of the Likert scale ratings (from 1 to 7). Thus, to ensure uniformity of the response and minimum wastage of time by the respondents as the respondents are majorly of middle management rank, the questionnaire was designed using a uniform scale with no subjective questions. The questionnaire was prepared using a popular online questionnaire design tool, and the questionnaire was distributed using online medium only. The author's social network resources were utilised to get the responses filled from the desired organisations. The only criterion for acceptance of the company in the sample set was that at least ten responses from the particular company should have been received for the company to be analysed in the sample set. The questionnaire was responded by managers from 110 companies; however, out of these, only 82 companies fulfilled the criteria of more than ten responses and hence were accordingly selected. All in all, 1,189 responses were evaluated for arriving at the final results.

SPSS software was utilised to perform analysis on the received forms and correlation; OLS regression was used to analyse the relationship between our study parameters, i.e. innovation objectives, innovation strategy, innovation performance and environmental context (Shaver 2007).

4 Results

A definite relationship can be seen between the innovation strategy pursued by the firm and the innovation objectives. Based on the results of the OLS regression, we were able to identify certain objectives which were positively impacted by a particular innovation strategy. At the same time, another set of objectives for the same strategy was identified which were negatively impacted. The results of the relationships obtained from the OLS regression are documented below. The Table 1 describes the relationship between innovation strategy and its favourable and unfavourable objectives. All results were found significant at 0.01 significance level. The overall R^2 for the model was 0.56, which explains the strength of the model in predicting the relationships.

We also performed the relationship analysis between innovation strategy and the exploration and exploitation capability of the firm. From the results presented below, it can be seen that innovation leader is the only strategy which balances exploration and exploitation. It can also be seen that cost-efficient follower is a more efficient strategy for firms specifically focussing on exploitation as it provides better results for exploitation as compared to innovation leader. Imitator is a negatively impacting strategy as can be seen by the negative relationship with the performance. Technology importer strategy coupled with cost-efficient follower can be seen to be the most superior innovation strategy in terms of balancing exploration and exploitation. The firms which focus on cost-efficient follower strategy along with importing complementary technologies are likely to exceed the innovation performance in comparison to the other innovation strategies (Table 2).

5 Conclusion and Future Research

We have been able to establish a relationship between various innovation objectives, innovation strategy and innovation performance of the firms. Trade-off baskets have been identified for the five innovation strategies, which can help managers select the relevant strategy based on the firm objectives. We have also been able to establish that cost-efficient follower combined with technology importer strategy is a superior strategy for emerging market firms as can be seen from the performance impact of firms. Innovation leader adopts a mix of exploration and exploitation. Firms following imitator and laggard strategies are likely not to achieve superior performance in the changing dynamic environment.

Table 1 Innovation strategy and related innovation objective trade-offs

Innovation strategy	Favourable objectives	Unfavourable objectives
Innovation leader	Develop radically innovative product	Maintain or increase market share
	Replace products being phased out	Reduce production cost
	Improve working conditions	Reduce consumption of raw materials
Cost-efficient follower	Maintain or increase market share	Develop radically innovative product
	Improve production processes for existing products	Introduce niche products or technology
	Partner with Value Net members for increasing WTP	
Imitator	Improve product quality	Develop radically innovative product
	Introduce niche products or technology	Improve working conditions
	Exploit new domestic market	Improve product quality
Technology importer	Improve existing technology to reduce reliance on imported equipment/know-how	Maintain or increase market share
	Improve production processes for existing products	Replace products being phased out
	Partner with Value Net members for increasing WTP	Exploit new international market
Laggard	Reduce consumption of raw materials	Maintain or increase market share
	Reduce production cost	Develop radically innovative product
	Reduce energy consumption	Exploit new international market

Table 2 Innovation strategy and innovation performance relationship

Innovation strategy	Innovation performance					
	Relative to leader		Last 3 years		Future trend	
	B	Sig	B	Sig	B	Sig
(Constant)	0.27	0.14	-0.19	0.36	-0.23	0.27
Innovation leader	0.19	0.00	0.14	0.00	0.16	0.00
Cost-efficient follower	0.31	0.00	0.22	0.00	0.06	0.08
Imitator	-0.11	0.00	0.08	0.01	-0.03	0.34
Laggard	0.01	0.72	0.08	0.00	0.04	0.06
Technology importer	0.01	0.72	0.04	0.09	0.06	0.00

Our research has certain limitations; the sample was based on convenience sampling. A more refined way of sampling should be adopted to collect the data. The study has adopted a perception-based approach; the study in the future should be conducted using empirical data from supporting secondary sources for validation of results. The antecedents of innovation objective selection need to be identified, and their impact on firm’s strategy should be established. The study can also focus on the impact of firm characteristics like ownership, country of origin, technological intensity and product type.

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