THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Determinants of Innovation Strategy

Dr. Veena Mehta Grover

Assistant Professor, Galgotias University, Greater Noida, Uttar Pradesh, India

Abstract:

Nowadays we live in privatized and globalised era. The main thrust of each and every economy to compete in best possible manner. Innovation has become the most important tool to compete in the international market. Over the period of time, different determinants of innovation strategy have been discussed by different researchers. This study is an attempt to integrate the data related to innovation strategy determinants as defined by various researchers. Then finding the gap and defining the potential future research areas.

Keywords: Innovation, strategy & moderators

1. Introduction

What is innovation strategy and what are its core determinants? How the strategy and innovation are inter-related. These questions have been the interest of researchers, managers and policy makers for decades. The work of Joseph Schumpeter at the beginning of the 20th century was an outstanding contribution in the field of innovation. In his two famous books, "The Theory of Economic Development" and "Capitalism, Socialism, and Democracy", this eminent Austrian economist emphasizes that innovation is the main driving force of economic development (Schumpeter, 1934, 1972). He stresses that in an economy, cyclical phases of prosperity and recession are a result of innovations, which in turn ensures economic expansion. Today, the economic scenario has changed considerably in comparison to Schumpeter's time. However, still his work remains worthy. Many experts have the view, innovation is now unavoidable for companies which want to develop and maintain a competitive advantage and/or gain entry into new markets (Rosenthal, 1992). It also affects international competitiveness and their productivity, output and employment performance (Asheim and Isaksen, 1997; Michie, 1999).

In the 21st century, no business strategy can be thought of without an innovative perspective. All the companies, whether it be, Software, Entertainment, Heavy Machinery Building, Electronics, Healthcare, Fast Moving Consumers Goods (FMCG) or Hospitality Industry need to have an Innovation strategy. To see the linkages between innovation strategy and business strategy and to identify other determinants of innovation strategy, this study reviews and analyses the literature intensely related to these concepts.

2. Objectives and Scope of the Study

This paper aims to provide a systematic review of research articles published on the determinants of innovation strategy. As the work is highly dispersed, our main purpose is to integrate the findings of these studies in order to identify where the scope for the future research lies. This article is organized as follows: -

First, this study will analyze the definition of innovation, strategy and innovation strategy given by different researchers. Next, research work in the relevant area would be analyzed. In last, we will discuss the result of our review and finish with the main conclusions, implications and recommendations for future managers, researchers and policy makers.

2.1. Defining Strategy

Strategy has been discussed by Management Gurus from Alfred Chandler (1962), Kenneth Andrew (1965), Igor Ansoff (1965 and 1984). Henry Mintzberg, Michael Portor, Gary Hamel and finally C K Prahlad. However, drawing from the various definitions of such illustrations experts, we can define strategy as, "Strategy is a pattern of plan that integrates an organization's values, major goals, policies and action sequences into a cohesive whole. A well formulated strategy helps to marshal and allocate organizations resources into a unique and viable posture based on its relative internal competencies and shortcomings, anticipated changes in the environment and contingent moves by the intelligent opponents."

Table 1 gives an overview of selected definitions by renowned strategy researchers:

2.2. Defining Innovation

Schumpeter is widely acknowledged as the founder of research in innovation. Schumpeter defined innovation as the implementation of new factor combinations. Many definitions for innovation emerged since then. Stanford Professor, Robert A Burgelman defines innovation as any new product, service, production system or delivery system. New business models can also be added to this list. Innovation is different from an invention or a discovery, where the focus is limited to inventing the new or discovering the unknown.

Innovation ensures practical& economical use of inventions and discoveries. Drucker pointed out, innovation often "begins with the analysis of the sources of new opportunities" but "when all is said and done, what innovation requires is hard, focused, purposeful work. If diligence, persistence and commitment are lacking, talent, ingenuity and knowledge are of no avail." Gary Hamel, a thought leader in the field of innovation, recently stated: "There are all kinds of alternatives to innovation, in the short run, you can cut costs, make acquisitions and buy back your own shares. But in the medium to long run there is no alternative (to innovation)."

2.3. Innovation Strategy

Explicit definitions on innovation strategy are rare. Mostly this term is used without prior definition. Then also some authors contributed in this area, which has been explained in table 2. Ideally, the innovation strategy of a firm should originally have derived from the overall firm strategy. Moreover, innovation and functional strategies (e.g. marketing, production) should be continuously aligned. In the words of Nanja Strecker, "innovation strategy is defined as the sum of strategic choices a firm makes regarding its innovation activity. Innovation goals (ends) are not included- only means. Innovation strategy is considered a firm-wide, cross-functional meta-strategy."

3. Research on Innovation Strategy

 \succ Fariborz Damanpour and William M. Evan (1984) (17) conducted a study on the impact of adoption of types of innovation (service, technological, process and administrative) on organizational performance. For the purpose, they conducted the research on 428 public service organizations. Their findings suggest that if an organization adopts the same type of innovation over the years, it does not have any impact on organizational performance, while divergence from the industry norm in adopting innovation types can be beneficial for the organization.

> Alok K. Chakrabarti, Ursula Weisnfeld (1991) (12) conducted a research on biotechnology firms In U.S to explore their innovation strategies. For this purpose, they collected the data through mailed questionnaire. They tried to understand strategies of these firms in R&D, marketing and technology acquisition. In R&D, they found the firms to follow either incremental or radical strategy. Firms use defender of innovators strategy in marketing. In technology acquisition, firms have differences on the ground of their emphasis on licensing or developing new technology.

> Shaker A. Zahra, Jeffrey G. Covin (1993) (60) conducted a study of the relationships among select business strategy dimensions, technology policy dimensions, and firm performance. Their research aimed to identify how these variables interrelate at the bivariate and multivariate levels. They concluded that technology policy choices vary widely across firms with different business strategies, and that business strategy affects the strength of the relationship between firm performance and particular technology policies.

Stanley F. Staler, John C. Narver (1993) (54) conducted a study on 140 SBUs of highly diversified forest-product corporation. They analyzed Miles and Snow strategy types. They focused on examining the business characteristics which lead to superior business performance for the Prospector, Analyzers and Defender strategy types. According to them, strong market orientation is essential for the Prospector, Analyzer and Defender strategy types.

➤ Gloria Barczak (1995) (7) conducted a study on tele-communications industry to find the inter-relationships between new product strategy, organizational structure, and NPD processes. She proposed that choice of new product strategy, structure, and processes are interrelated, which in turn affects NPD performance. She further emphasized that performance is related to the use of cross-functional teams. This study also emphasized the importance of idea generation and idea screening to new product performance.

➤ Roger J. Calantone, Shawnee K. Vickery, and Cornelia Droge (1995, 11) conducted a research on identifying the relationship between the performance of specific innovation-related activities and overall business performance in the furniture industry. Their study also evaluates the relationship between a firm's performance on an NPD activity and the importance assigned to that activity by the firm's chief executive officer (CEO). They emphasized the role of top management in innovation practices adopted in the organization. The main responsibility lies with the leader's regarding organizational performance.

Shaker A. Zahra (1996, 61) explored the impact of a company's comprehensive technology on its performance. His research also verifies the role of the environment as a quasi-moderator of the TS-PR. The most important aspect of the study is that he analyzed different dimensions of environment as a quasi-moderator of technology policy and firm performance.

 \succ Hubert Gatignon and Jean-Marc Xuereb (1997, 27) analyzed that while developing innovations, which of three different strategic orientations of the firm (customer, competitive, and technological) is more appropriate. They concluded that (1) A firm wishing to develop an innovation superior to the competitor must have a strong technological orientation; (2)in high growth markets, competitive orientation is useful because it enables firms to develop innovations with lower costs, which is a critical element of success; (3) firms should be consumer- and technology-oriented in markets in which demand is relatively uncertain-together, these orientations lead to products that perform better, and the firm will be able to market innovations better, thereby achieving a superior level of performance; and (4) a competitive orientation is useful to market innovations when demand is not too uncertain but should be de-emphasized in highly uncertain markets.

 \succ Tang (1999, 57) believes that there is a need to integrate the vast research and proposed a model based on six constructs of Innovation i.e.: information and communication, behavior and integration, knowledge and skills, project testing and doing, guidance and support, and external environment. He says that innovation is a more complex concept, so managers must be aware of the organization – specific context of variables and complexity of their interactions.

> Jiju Antony (2000,) emphasized the role of six sigma as a strategy for supporting innovation to achieve excellence in business. According to him nowadays quality and innovation are mainly seen as two complementary aspects of Strategic

Management. To reap the benefits from integration of two, it is a must that six sigma strategies should be well defined by the management.

▶ P.K. Banerjea (2000) explained the two-way relationship between business strategy & technology strategy. He said that technological innovations should be guided by a clear vision of the company's plans & objectives. The organizational objectives & goals must be based upon the organizational strength in technological skills & capabilities. These attributes which company develop, will help them to be unique, competitive & successful like 3 M Company.

 \triangleright Ulrike de Brentani (2000) believes that new product development is essential for outstanding corporate performance. Depending upon the degree of innovativeness, managers need to adjust their focus and their approach for developing successfully new service products. Some important factors which are to be considered by managers are: (1) customer needs, problems and operating systems, (2) having a trained and motivated front line of experts who interact with the clients during service introduction and delivery, (3) ensuring that projects have a seamless fit with the firm's strategy as well as with its specialized experiences, resources and reputation.

Fariborz Damanpour, Shanti Gopalkrishanan (2001) conducted a study to examine the dynamics that govern the adoption of product and process innovations at the firm level over a period of time. Their mail thrust areas were: (i) What type of innovation is more readily adopted?, (ii) Does the adoption of one type of innovation lead or lag the adoption of other type? And (iii) does the pattern of adoption of innovation types has an effect on organizational performance? They concluded that product innovations are adopted at a greater rate and speed than process innovations, the adoption of product innovations is positively associated with the adoption of process innovations and high performing banks adopt product and process innovations and high performing banks adopt product and process innovations more evenly than low performing banks.

 \succ George J. Avlonitis, Paulina G. Papastathopoulou, Spiros P. Gounaris (2001) conducted a study aiming at identifying different innovative types which may be associated with different development patterns and performance outcomes. They suggested that an almost inverted U-shaped relationship exists with the degree of service innovativeness. That is, the most and the least innovative new services are relatively less successful in terms of financial performance compared to the moderately innovative types of new delivery processes and service modifications.

 \succ V J Lawrence (2002) believes that managing 0f innovations (whether incremental or breakthrough) is vital for a business organization. Management should always encourage innovation because once stifled it will be difficult to resuscitate in the times of need. A business organization should adopt innovations according to its business objectives.

> Mile Terziovski (2002) conducted a cross-sectional study of Australian and New Zealand manufacturing companies. He emphasized that performance can be improved with the integrated strategy of radical innovation and continuous improvement. His research shows that to improve customer satisfaction and productivity, continuous innovation improvement strategy is preferred and to increase relative technological competence "top down" strategy is appropriate.

> Peter W Roberts, Rafhael Amit (2003) conducted a study on adoption of new products and processes in the Australian retail banking sector over 1981 to 1995 period. Their result show that vast majority of observed innovative activity was based on ideas sourced from outside focal firm and that innovations diffused very quickly across competing banks. They also analyzed the relationship between innovative activity and current financial performance. They concluded that banks that undertook more innovative activities and were more consistent in that activity and if that activity was somewhat differentiated from the industry norm tended to display superior financial performance.

 \succ G. Tomas M. Hult, Robert F. Hurley, and Gary A. Knight (2004) developed a model showing that there is a direct relationship between innovativeness and business performance regardless of the market turbulence in which the firm operates. They also talked about three antecedents of innovation i.e. market orientation, entrepreneurial orientation, and learning orientation.

Richard M.Walker (2004) concludes about innovation in public sector & believes that innovation & organizational performance is positively related. To prove this, he studied literature on innovations from 1983 to 2003. According to him, innovation is a perquisite for success of public sector units but innovation route a public agency adopts may vary. Many public organizations take it upon themselves to innovate and seek excellence. Some are forced along the path of new approaches by oversight bodies that result in ways of working by providing services that are new to a specific agency or the public sector as a whole.

Sunil Mani (2005) conducted a research on comparative analysis on Innovation Capability in the telecom Industry of China & India. He says China & India have one of the largest telecommunication equipment markets in the world. These two countries have pursued widely diverging strategies for developing their domestic innovation capabilities. India followed a very rigid policy of indigenous development of domestic technologies by establishing stand-alone public laboratory that develop state- of- the-art switching technologies. The public laboratory was not given any strategic direction, even though it was technological speaking, very competent. Consequentially the country, despite possessing good quality human resources was unable to keep pace with changes in the technology frontier and the equipment industry has now become essentially dominated by affiliates of MNCs. China on the contrary first dependent on the MNCs for her technology needs in this area but subsequently encouraged by the emergence of three national champions, two of which are erstwhile public laboratory. The Country has built up considerable hardware capability in both fixed line & mobile communication technology and has also emerged as a major player in the world market.

Consequently, the country has now become one of the largest manufactures of telecommunication equipments in the world. Implications of this study are that the telecommunication industry is an example, in which Chinese are able to compete in the world market not just based on the country's possession of cheap labour but on the innovation prowess. Mere possession of research capability while necessary is not sufficient enough for a country to emerge as an important producer of high technology products.

> Patricia A. Nelson (2005) believes that firm's institutional context affects the strategy a firm employee when managing innovation. In particular we are concerned withed how firms in LMEs and CMEs manage disruptive/discontinuous innovation. The findings at this stage indicate that despite the increasing nature of R&D, partly due to the rise of FDI, national contexts continue to matter. LME normally follows disruptive innovation & CMEs normally follows discontinuous innovation.

> Arindam Banerji (2005) believes that innovation requires at the same time, an individualistic, structuralist & interactionist approach. Individualistic because it supposes courage in the undertaking and perseverance of the entrepreneur and the sturcturalist as the effectiveness of innovation depends on the design of an organization, its formal structure and core competences. Finally, innovation requires an interactionist approach because it results from complex alliances and interdependent interactions, and therefore constitutes a hybrid mixture of actors who correspond to its collective character.

➤ Nicholas O Regan, Abby Ghoba Dian, Martin Sims (2006) conducted a study on electronics and engineering sectors to explore the innovation process within the context of strategy, organizational, culture and leadership style in order to understand fast track, Effective innovation in SMEs. Their analysis shows that high performing firms place a much higher emphasis on strategy and have very good leadership and culture styles as compared to low performing firms. Their research basically aims at to define systematic steps to enable managers to efficiently managed and deploy innovation.

Sabin Srivannaboon, Dragan Z. Milosevic (2006) recognized the strategic importance of project management (PM) in the corporate world through an exploration of PM/ business strategy alignment. For this, they adopted the case study method. An empirically based theoretical framework was developed to address the configuration of PM as influenced by the business strategy (and vice versa). They found that business strategy affects PM via the competitive attributes of the business strategy (time-to-market, quality, and cost). These competitive attributes are used deliberately to determine the configuration and emphasis placed on different PM elements (e.g., strategy, organization, process, tools, metrics, and culture). Likewise, PM also has impact on business strategy if the operating conditions of a project detect significant threats from environmental changes (e.g., a market shift).

➤ R.S. Dwivedi (2006) conducted a case study of Dr. APJ Abdul Kalam to illustrate how he generated, developed and implemented innovations (especially administrative & managerial) at ISRO (where he worked for over two decades) to accomplish superb organizational performance through the development of indigenous technologies. He concluded that an Indian companies need to be improved their ability to innovate to meet international standards of performance to survive, sustain profit & growth instead of innovating unilaterally, the entire network of industry should be involved to avoid financial risk. Suitable HRM practices an organization climate & structures must be put in place to effectively to promote innovations. Appropriate management tools can be used to generate innovationist mindset in the enterprise. Large organizations can use small team to develop innovative ideas. Specifically, Indian organizations engaged in development tasks can accomplish superb organizational performance through widespread indigenous technological breakthroughs using varied innovative administrative and managerial practices pioneered by Dr. APJ Abdul Kalam at the ISRO.

> The Economist Intelligence Unit (EIU) (2007) conducted two parallel research studies to find out "how important innovation was", "which countries innovated better than others" and "why"? They conducted a worldwide survey of 485 senior executives to gain a better understanding of the drivers of innovation and their relative importance. Then assigned a ranking of 82 of the world's economies by innovation performance during 2002-06, with a forecast for the subsequent 5-year period. The report is part of a long-range project called "Foresight 2020", undertaken on three themes – personalization, collaboration and innovation. The study highlights about benefits of innovation on both national economic growth and corporate performance. It identifies, as some of the key factors driving innovation, the emergence of high-tech clusters (e.g.: technology parks), growth of technically skilled work force and high-quality IT and communications infrastructure.

The other major findings are as follows.

- 1. Japan, Switzerland, the US and Sweden are the world's top four innovators among the 82 economies.
- 2. China is getting substantial capital investments for driving innovation, but is not as efficient as India (and several other countries) in converting it.
- 3. US is considered by survey respondents to have the best conditions for innovation; India is in second place
- 4. Most valued places for innovation are countries with the following national characteristics:
 - Robust protection of intellectual property
 - Political stability
 - Efficient regulatory environment
 - Sound institutional framework
 - Quality IT and communications infrastructure
 - Technical skills of the workforce
 - Availability of scientists and engineers,
 - Availability of university graduates

The World Bank has conducted a similar study in 2007. According to this study titled, "Unleashing India's Innovation: Towards a Sustainable and Inclusive Growth", India needs to tap its innovation potential, relying on innovation-led, rapid, and inclusive growth to achieve economic and social transformation. The report recommends a three-pronged strategy comprising (a) increased competition supported by stronger skills, information infrastructure and financing (b) improved knowledge creation, diffusion, and commercialization, and (c) increased focus on inclusive innovation, to unleash India's innovation potential. The report further emphasizes that the three-pronged innovation strategy need to be implemented in a realistic and time-bound manner, possibly by a

task force of policy makers working with business and social leaders. To capture the nation's imagination, it may be desirable to focus on grand challenges such as access to clean water throughout the country, mitigating road congestion in cities and so on. A publicprivate oversight mechanism may be required to evaluate and address the fragmentation of India's current innovation system with regular monitoring and periodic international benchmarking, as India's innovation potential gets unleashed. If this [unleashing] succeeds, that too in an inclusive manner, then the model will be of particular interest to other developing countries and emerging market economies.

Yet another recent report on India's innovation capabilities, with a focus on the IT sector, is the NASSCOM-BCG Innovation Report 2007, which studied the innovation management in the Indian IT-ITES industry.

The report addresses three aspects of the Innovation agenda:

- 1. Imperative for innovation: The challenges in front of the Indian IT-ITES firms and the need for the firms to look at innovation as a 'must-have'.
- 2. Firm level agenda and approach for firms to spur innovation; A diagnostic tool-kit through which a firm can evaluate its current innovation maturity and the processes and mechanisms for a firm to develop a practical innovation strategy.

Recommendations to expand the innovation ecosystem in India: Benchmarking the Indian innovation ecosystem with global innovation ecosystems and actionable recommendations to develop India's innovation ecosystem. Yet another recent report on India's innovation capabilities, with a focus on the IT sector, is the NASSCOM-BCG Innovation Report 2007, which studied the innovation management in the Indian IT-ITES industry.

The report addresses three aspects of the Innovation agenda:

- 1. Imperative for innovation: The challenges in front of the Indian IT-ITES firms and the need for the firms to look at innovation as a 'must-have'.
- 2. Firm level agenda and approach for firms to spur innovation; A diagnostic tool-kit through which a firm can evaluate its current innovation maturity and the processes and mechanisms for a firm to develop a practical innovation strategy.

Recommendations to expand the innovation ecosystem in India: Benchmarking the Indian innovation ecosystem with global innovation ecosystems and actionable recommendations to develop India's innovation ecosystem.

Fariborz Damanpour, Richard M. Walker and Claudia N. Avellaneda (2009) analyzed consequences of adoption of three types of innovation (service, technological process, and administrative process) in service organizations. Its main thesis is that the impact of innovation on organizational performance depends on compositions of innovation types over time. Their research suggested that stability in innovation activity from adopting the same composition of innovation types over time does result in for sustained high performance, rather the study emphasized that the composition of innovation activity over time is dynamic and organizations would need to change it for sustained high performance.

Performance measurement (PM) and business process reengineering (BPR).

Natasa Vujica Herzog, Stefano Tonchia, Andrej Polajnar (2009) conducted an empirical study to show the linkages between manufacturing strategy, benchmarking, performance measurement (PM) and business process reengineering (BPR). Their results confirmed the need for a strategically-driven BPR approach and the positive impact of performance measurement on BPR performance.

Frances E. Bowen, Mahdi Rostami, Piers Steel (2010) conducted a study on 'A meta-analysis of the relationships between organizational performance and innovation'. Their findings suggest that overall innovation and organizational performance are indeed positively correlated to each-other, confirming the conventional economic rent-seeking and the issues interpretation, slack search and threat rigidity arguments. Their analyses identified several moderators of these main effects. There is a stronger relationship between performance and innovation for studies framed as dealing with future performance compared with those framed as past performance. The relationship is also stronger where innovation is measured by innovative posture, in smaller companies, and in service industries, especially if performance is measured in terms of market performance.

Te-Tsai Lu, Jong-Chen Chen (2010) conducted a study whose main objective was to construct a system that allows organizations and consumers to interact with each other to investigate the effects of organizations adopting different innovative strategies on consumers. They implemented it by constructing an artificial world that took some important features of organizations and consumers in the real world. Their main areas of analysis were: organization, consumer, satisfaction (fitness) evaluation, and innovative change, these four parameters were linked into a model with discrete-event simulation techniques. Their experimental results show that organizations adopting a comparatively conservative innovative strategy were likely to have better performance (in terms of consumer market share) than organizations adopting a comparatively aggressive innovative strategy. The result in the ''radical innovation'' experiment showed that there were limited changes of consumer market share for the organizations adopting small innovative change strategy. By contrast, innovation provided lesser-performing organizations a good chance of surpassing best. performing organizations if they adopted some innovative strategies

Daniel Jiménez-Jiménez, Raquel Sanz-Valle (2010) examined the relationship organization learning, performance and innovation. They concluded that both variables i.e. organization learning and innovation affects business performance. Another finding of this study is that size of the firm, age of the firm, industry characteristics and environmental turbulence moderate these relations.

Micheline Goedhuys, Reinhidle. Veugelers (2011) conducted a study on Brazilian manufacturing firms. They identified to innovation strategies of the firm i.e. internal development (technology make) and external development (technology buy) and analyzed their effect on successful product and process innovations. They further explored the contribution of product and process innovation in growth of a firm. Their result show that in a company, successful product and process innovations depend upon mostly on

"Technology buy" strategy either alone or in combination with a "Technology Make" strategy. According to them, innovative performance is an important driver for firm growth. Innovation and Growth performance are also supported by access to finance and skilled work force.

Gurhan Gunday, Gunduz Ulusoy, Kemal Kilic, Lutfihak Alpkan (2011) Conducted a study to find out the effect of organizational, process, product and marketing innovation on performance, with special reference to innovation, production, market and financial performance. These results should that there is a positive relationship between innovation & performance.

4. Findings and Conclusions

Innovation strategy in manufacturing sector is a very complex process which depends upon numerous factors. Although several factors have been discussed over the years yet some others demand attention.

- First of all, previous studies underscore the effect of industry characteristics on selecting a particular innovation strategy. Although studies conducted on multiple industries help in generalizing knowledge, but they are not able to highlight the nuances of a particular industry. Whereas the study on a particular industry may not be generalizable, but that can enhance our knowledge about a particular industry and may offer valuable insights to academicians, researchers and policy makers.
- Business strategy can be considered an important determinant of innovation strategy. But the journey of studying innovation strategy/ business strategy has just begun. The relationship between innovation strategy and business strategies is multifaceted and needs to be further studied in different angles. Further the relationship of innovation strategy/ business strategy alignment and firm's performance is obscure.
- There is also a need for studies that examine innovation strategy both the content and process aspects of innovation strategy and how they affect firm's performance. Process variables (e.g. how decisions regarding innovation strategy are made in the organization) determine the interpretation of environmental factors which affect strategic choices about innovation strategy.
- Another important area needs to be explored is the role of moderators that innovation research has seldom considered explicitly.

If research on innovation strategy is evaluated generally, it can be concluded that some worthy determinants are discussed by different researchers over the years, still some areas needs to be explored as discussed above. But if specifically, for Indian economy, it has to be evaluated, then from the review of literature, it is obvious that small number of studies have been conducted on innovation strategies in Indian economy. Moreover, they focus on its strategy formulation part and not on its implementation part. A comparison of Innovation practices in manufacturing industries & service industries is also lacking. Role of organizational culture in effectiveness of innovation strategy needs to be explored further. Not even a single research has been conducted on business strategy/ innovation strategy alignment and its relationship with performance.

5. References

- i. Ananth Krishnan, K. (2008) 'Innovation Networks: Casting a wider network for IT innovation', Tata Consultancy Services.
- ii. Antony, J. (2007) 'Six Sigma: a strategy for supporting innovation in pursuit of business excellence- invited paper', International journal of Technology Management, Vol. 37, Nos. ¹/₂, pp.8-12.
- iii. Anthony Read (2000), 'Determinants of Successful Organizational Innovation: A Review of Current Research', Journal of Management Practice, Vol.3, No.1/2000, pp. 95-119.
- iv. Archibugi Daniele, Howells Jeremy, Michie Jonathan (1999). 'Innovation policy in a global economy', Technovation (1999), Volume: 21, Issue: 9, Pages: 278
- v. Asheim, B. T. and Isaksen, A. (1997a): Location, Agglomeration and Innovation: Towards Regional Innovation Systems in Norway. European Planning Studies, Vol. 5, No. 3, 299-330.ractice', Vol.3, No.1, pp. 95-119.
- vi. Auh, S. /Mengue, B. (2005) 'the influence of top management team functional diversity on strategic orientation: The moderating role of environmental turbulence and inter-functional coordination', Research in Mar-keting, 22, p.333-350.
- vii. Avlonitis J. George, Papastathopoulou G. Paulina, Gounaris P. Spiros (2001). 'An empirically-based typology of product innovativeness for new financial services: Success and failure scenarios', Journal of Product Innovation Management, Volume: 18, Issue: 5, Pages: 324-342.
- viii. Barczak, G. (1995). 'New product strategy, structure, process, and performance in the telecommunications industry, Journal of Product Innovation Management', 12, p.224-234.
- ix. Benner, M.J./Tushman, M.L. (2003). 'Exploitation, exploration, and process management: The productivity dilemma revisited', Academy of Management Review, 28(2), p.238-256.
- x. Brentani De Ulrike (2000). 'Innovative versus incremental new business services: Different keys for achieving success', Journal of Product Innovation Management (2001) Volume: 18, Issue: 3, Pages: 169-187
- xi. Bstieler, L. (2005). 'The moderating effect of environmental uncertainty on new product development and time efficiency', Journal of Product Innovation Management, 22, p.267-284.
- xii. Calantone, R.J./Garcia, R. /Dröge, C. (2003): The effects of environ-mental turbulence on new product development strategy planning, Journal of Product Innovation Management, 20, p.90-103.
- xiii. Chakrabarti K. Alok/ Weisenfeld Ursula (1991). 'An empirical analysis of innovation strategies of bio-technology firms in U.S', Journal of Engineering and Technology Management, 8, 243-260.

- xiv. Clark, K. and R. Hayes (1985). 'Exploring factors affecting innovation and productivity growth within the business unit' in K. Clark and C. Lorenz (eds.), The Uneasy Alliance: Managing the Productivity- Technology Dilemma. Harvard Business School Press, Boston, MA, pp. 425-458.
- xv. Damanpour, Fariborz (1983). 'Technical versus administrative rates of organizational innovation: A study of organizational lag.' Unpublished Ph.D. dissertation, University of Pennsylvania.
- xvi. Damanpour, F (1991). 'Organizational innovation: a meta-analysis of effects of determinants and moderators', Academy of Management Journal, 34, 555–90.
- xvii. Damanpour, F. (1996). 'Organizational complexity and innovation: developing and testing multiple contingency models'. Management Science, 42, 693–716.
- xviii. Damanpour, F. and Evan, W. M. (1984). 'Organizational innovation and performance: the problem of organizational lag'. Administrative Science Quarterly, 29, 392–409.
- xix. Damanpour Fariborz, Walker Richard M. and Avellaneda Claudia N. (2009). 'Combinative Effects of Innovation Types and Organizational Performance: A Longitudinal Study of Service Organizations', Journal of Management Studies (2009), Volume: 46, Issue: 4, Pages: 650-675
- xx. Damanpour, F. 'The Dynamics of the adoption of product and process innovations in organizations', Journal of Management Studies, 38, 0022-2380.
- xxi. Dutz, Mark A. (2007). 'Unleashing India's Innovation: Towards sustainable and inclusive growth', The World Bank.
- xxii. Dyer, B. /Song, X.M. (1998). 'Innovation strategy and sanctioned conflict: A new edge in innovation? Journal of Product Innovation Management', 15, p.505-519.
- xxiii. Economist Intelligence Unit (2007), "Innovation: Transforming the way business creates", The Economist, p23
- xxiv. Ettlie, J.E. /Submaraniam, M. (2004). 'Changing strategies and tactics for new product development', Journal of Product Innovation Management, 21, p.95-109.
- xxv. Firth, R. /Narayanan, V.K. (1996). 'New product strategies of large, dominant product manufacturing firms: An exploratory analysis', Journal of Product Innovation Management, 13, p.334-347.
- xxvi. Galbraith, J. (1973). 'Designing complex organizations', Reading, M.A.: Addison-Wesley.
- xxvii. Gatignon Hubert/ Xuereb Jean-Marc (1997). 'Strategic Orientation of the firm and new product performance', Journal of Marketing Research, Vol.34, pp 5-14.
- xxviii. Goedhuys Micheline, Veugelers Reinhidle (2011). 'Innovation strategies, process and product innovations and growth: Firmlevel evidence from Brazil', Structural Change and Economic Dynamics (2011) Issue: December, Pages: 1-26
- xxix. Gunday Gurhan, Ulusoy Gunduz, Kemal Kilic, Lutfihak Alpkan (2011). 'Effects of innovation types on firm performance' International Journal of Production Economics (2011) Volume: 133, Issue: 2, Pages: 1-15
- xxx. Griffin, A. /Page, A.L. (1996). 'PDMA success measurement project: Recommended measures for product development success and failure, Journal of Product Innovation Management', 13, p.478-496.
- xxxi. Herzog Natasa Vujica, Tonchia Stefano, Polajnar Andrej (2009). 'Linkages between manufacturing strategy, benchmarking, performance measurement and business process', Computers & Industrial Engineering (2009) Volume: 57, Issue: 3Pages: 963-975
- xxxii. Hult M. Tomas G., Robert F. Hurley, Knight A. Gary (2004). 'Innovativeness: Its antecedents and impact on business performance', Industrial Marketing Management Volume: 33, Issue: 5, Pages: 429-438
- xxxiii. Jiménez-Jiménez Daniel, Sanz-Valle Raquel (2010). 'Innovation, organizational learning, and performance', Volume: 64, Issue: 4, Pages: 408-417
- xxxiv. John. Hauser, Gerard J. Tellis, & Abbie Griffin, "Research on Innovation: A Review and Agenda for Marketing Science", http://ssrn.com/abstract=907230
- xxxv. Kleinschmidt, E.J./Cooper, R.G. (1991): The impact of product innovativeness on performance, Journal of Product Innovation Management, 8, p.240-251.
- xxxvi. Kleinschmidt, E.J. /DE Brentani, U. /Salomo, S. (2004). 'Evaluating performance of global new product development programs: A resource- based view, Working Paper', McMaster University, Hamiton, Concordia University, Montreal, Karl Franzens University, Graz.
- xxxvii. Lawrence V J (2002). 'Managing the innovation cycle', Business Review, 113-125.
- xxxviii. Mani Sunil, "The Dragon Vs the Elephant: Comparative Analysis of Innovation Capability in the Telecom Industry of China and India." Economic and Political weekly, Sep. 24, 2005, pp.4271-4283.
- xxxix. Mintzberg, H. (1978). 'Patterns in strategy formation', Management Science, 24, p.934-948.
 - xl. Motohashi, K. (1998). 'Innovation strategy and business performance of Japanese manufacturing firms', Economics of Innovation and New Technology, 7, p.27-52.
 - xli. M.S.Balaji (2006). 'Strategic Management Theory: A Revisit", the ICFAI Journal of Business Strategy', Vol. III, No. 2, pp 22-34.
 - xlii. Narver, J.C./Slater, S.F. (1990). 'The effect of a market orientation on business profitability', Journal of Marketing, October, p.20-35.
 - xliii. Nasscom website, www.nasscom.org, visited on 08 May 11. Patricia A. Nelson. 'Strategic Innovation Management and the Firm's Institutional Context', http://ssrn.com/abstract=985247

- xliv. P K Banerjea (2007). 'Innovation and Imagineering for Sustainable Corporate Growth in the 21st Century', The ICFAI Journal of Business Strategy, Vol. IV, No. 2, pp. 47-57.
- xlv. P.K. Banerjea. 'Technology Strategy and Business Strategy: A Dyadic Relation', The ICFAI Journal of Business Strategy, June 2005, pp 38-49. Pankaj Ghemawat and Daniel Levinthal, "Choice Interactions and Business Strategy", Strategy Unit Working Paper No.01-012, Harvard Business school.
- xlvi. Peter W. Roberts/ Raphael Amit (2003). 'The dynamics of innovative activity and competitive advantage: The case of Australian retail banking, 1981-1985, Organization Science, Vol. 14, No.2, pp 107-122.
- xlvii. Porter, M.E. (1980). 'Competitive strategy techniques for analyzing industries and competitors', The Free Press, New York.
- xlviii. Salomo Sören, Katrin Talke, Strecker Nanja (2008). 'Innovation Field Orientation and Its Effect on Innovativeness and Firm Performance' Journal of Product Innovation Management (2008) Volume: 25, Issue: 6, 560-576.
- xlix. Shaker A. Zahra (1996). 'Technology Strategy and Financial Performance: Examining the moderating role of Firm's Competitive Environment', Journal of Business Venturing, 189-219.
 - Regan O Nicholas, Dian Ghoba Abby, Sims Martin (2006). 'Fast tracking innovation in manufacturing SMEs', Technovation (2006) Volume: 26, Issue: 2, Pages: 251-261
 - li. Schumpeter, J.A. (1934). 'Theorie der wirtschaftlichen Entwicklung', 4th edition, Berlin: Duncker & Humblot.
 - lii. Schumpeter, J.A. (1939). 'Business cycles A theoretical, historical and statistical analysis of the capitalistic world', New York: McGraw-Hill.
- liii. Schumpeter, J.A. (1972). 'Capitalisms, Socialisms und Demokratie', 3rd edition, München: Francke.
- liv. Sidney G. Winter, in his book titled Wharton on Managing Emerging Technologies.
- Iv. Slater, S.F./Narver, J.C. (1994). 'Does competitive environment moderate the market orientation performance relationship?' Journal of Marketing, 58 (January), p.46-55.
- Ivi. Srivannaboon Sabin, Milosevic Z Dragan. (2006). 'A theoretical framework for aligning project management with business strategy', Project Management Journal (2006) Volume: 37, Issue: 3, Pages: 98-110
- Ivii. Sunil Mani (2005). 'The Dragon Vs the Elephant: Comparative Analysis of Innovation Capability in the Telecom Industry of China and India.' Economic and Political weekly, Sep. 24, pp.42-71.
- lviii. Tang, H. K. (1999). 'An inventory of organizational innovativeness. Technovation', 19(1), 41-52.
- lix. Terziovski Mile. 'Achieving performance excellence through an integrated strategy of radical innovation and continuous improvement', Measuring Business Excellence, 6, 2, pp 5-14.
- lx. Utterback, J. (1974). 'Innovation in industry and the diffusion of technology, Science', 183(4125), p.620-626.
- Ixi. Zahra, S.A./Covin, J.G. (1993). 'Business strategy, technology policy and firm performance, Strategic Management Journal', 14, p.451-47
- Ixii. Zahra, S.A (1996). 'Technology strategy and financial performance: Examining the moderating role of the firm's competitive environment', Journal of Business Venturing (1996) Volume: 11, Issue: 3, Pages: 189-219

Annexure

| Author | Definition |
|---------------------|---|
| Neumann/Morgenstern | Sequence of individual decisions channelized to achieve certain goal. |
| (1953) | |
| Chandler | Setting of long term goals and objectives, the adoption of particular courses of action and optimum |
| (1962) | allocation of resources for achieving these goals. |
| Ansoff | Policies to ensure long-term success. |
| (1965) | |
| Miles/Snow | Strategy is more of a pattern or stream of major and minor decisions about an organization's possible further |
| (1978) | domains. They further said that these decisions taken have meaning only when are implemented. In other |
| | words, an organization strategy can best be inferred from its behavior. |
| Porter | Competitive strategy is a combination of the ends (goals) for which the firm is striving and the means |
| (1980 & 1996) | (policies) by it is seeking to get there (1980). |
| | Competitive strategy is about deliberately choosing a different set of activities to deliver a unique mix of value (1996) |

Table 1: Definitions of Strategy

| Author | Definition of Innovation Strategy |
|-----------------|--|
| Gilbert (1994) | Innovation strategy determines to what degree and in what way a firm uses innovation practices to execute its |
| | business strategy. |
| Firth/Narayanan | They focused their analysis at the firm level, and so define a firm's new product strategy as the aggregate pattern of |
| (1996) | product introductions that take place in the firm over the period of time. |
| Dyer/Song | Innovation strategy can be defined as the new product and market development plans of the firm. |
| (1998) | |
| Vans | Innovation strategy contains the strategic goals and activities for the product and process innovations aimed at. |
| (2002) | (Subsequently Vahs discusses): - |
| | innovation strategy as functional or meta strategy |
| | Innovation strategy as market entry or timing strategy. |
| Hauschildt | Innovation strategies (formulated via questions): |
| (2004) | Aim at own innovation at all? Imitate or not innovate at all? |
| | Innovation on own or in cooperation with others? |
| | Innovation as the core task of the firm? |

Table 2: Definitions of Innovation Strategy