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A Content Analysis of Factors Affecting New Product Development Process

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Abstract: The objective of this study is to review the international marketing literature on new product development process and compare the changes in the important factors in the process with the changes in the management approaches. For this purpose, the articles in three international marketing journals were selected and "new product development" and "new product performance" were searched for in the abstracts. After grouping the variables in the process, they were compared with the perspectives of management in the related periods. The results indicated that organizational factors have always been important for new product development process, which is in line with the nature of the innovation process. But the emphasis on internal factors has increased in the 21st century which is congruent with the change in management perspective foregrounding resource based view. The study differs from the similar literature review studies on the point that it deals with the topic from international marketing perspective. Therefore, R&D and other marketing studies are not included in the review and the study proposes the important factors from international firms' point of view.

Keywords: New product development, New product performance, International marketing, International management, Innovation

JEL Classification: M31, O31

Yeni Ürün Geliştirme Sürecini Etkileyen Faktörlerin Değerlendirilmesi

Özet: Çalışmanın amacı uluslararası pazarlama literatürünü yeni ürün geliştirme süreci açısından değerlendirmek ve süreçte etkili olan faktörlerde gözlenen değişimi yönetim anlayışlarındaki değişimle kıyaslamaktır. Bu amaçla "yeni ürün geliştirme" ve "yeni ürün performansı" ifadeleri seçilen üç uluslar arası pazarlama dergisinin özetlerinde aranmıştır. Süreçteki değişkenler gruplandıktan sonra ilgili dönemdeki yönetsel bakış açılarıyla kıyaslanmıştır. Sonuçlar örgütsel faktörlerin daima önemli olduğunu ve bunun da inovasyon sürecinin doğasıyla uyumlu olduğunu göstermektedir. Ancak içsel faktörlerin etkisi 21.yüzyılda artmaya başlamıştır ve bu da yönetim perspektifinde etkisi artmaya başlayan kaynak temelli yaklaşıma uygundur. Bu çalışma konuyu uluslar arası pazarlama perspektifinden ele almış olmasından dolayı benzer literatür taramalarından farklıdır. Bu nedenle AR&GE ve diğer pazarlama çalışmaları taramaya dahil edilmemiştir ve çalışma uluslar arası alandaki firmaların bakış açılarını yansıtmaktadır.

Anahtar Kelimeler: Yeni ürün geliştirme, Yeni ürün performansı, Uluslararası pazarlama, Uluslararası yönetim, Inovasyon

JEL Sınıflandırması: M31, O31

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1. Introduction

Defined as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD, 2005, p.46), innovation has been discussed and researched by the academicians from diverse disciplines. Globalization, the new technologies that emerge, competition and many other factors lead to restructuring of each aspect of the product or service, which benefits highly from innovation. There are four main types of innovation: product innovations, process innovations, marketing innovations and organization innovations (OECD, 2005, p.47). Termed as new product development (NPD) by marketing and management departments, or innovation by R&D department, product innovation is no longer a strategic option for firms, but a necessity (Craig and Hart, 1992). It is defined as the process of conceiving, creating, and launching a product new to the company, to a market or to the world (Sivakumar and Nakata, 2003).

As the scope of trade has expanded beyond the national barriers, the whole world has started to be included in the competition area. The view that the world is becoming a homogenous market thanks to the developments in transportation and communication (Levitt, 1983) has contributed to the increase in competition among companies. In this atmosphere, every step that the firms take, both at home and abroad, is crucial. The activities should be carried out by considering the foreign markets if the firm positions itself as a multinational or global company.

With the homogenization of consumer tastes across countries, the abolition of trade barriers, advances in communication and transportation, and the rising economic standards in many countries, today's firms are seeking product-market opportunities beyond domestic borders (Jeong, 2003). The tough competition has forced marketing managers to introduce new products not only for the consumers within their national barriers but also for those beyond those lines. They are compelled to "restructure and re-strategize" (Cooper, 1994) in order to cope with the changing conditions. Therefore, new product development studies have been underlined by the researchers.

Product innovations are significant for a firm's competitive advantage in international markets and various studies have tried to determine the factors affecting the success or failure of these products. The performance of new products are measured by profits, sales, or by other indicators. Moreover, the conceptual background of these processes is analyzed in some studies (Song and Parry, 1997; Kleinschmidt, de Brentani and Salomo, 2007).

Various studies have handled the factors affecting new product performance from diverse perspectives. While some studies focused on the phases of new product development (e.g.: Calantone and di Benedetto, 1988), some others mentioned the effect of strategic or organizational factors (e.g.: Leonard-Barton, 1992; Matsui, Filippini, Kitanaka, and Sato, 2007; Kleinschmidt, Brentani and Salomo, 2007) and some studies took environmental factors as affecting the performance (e.g.: Ganesan, Malter and Rindfleisch, 2005).

The purpose of this paper is to review the articles with the aim of determining the factors that are identified as affecting new product development performance. Various studies have mentioned different factors that are considered important for the process. Atuahene-Gima (1995) analyzed the topic from the perspective of Australian firms and grouped the factors affecting new product performance and propensity under two

headings: firm factors and new product factors. Cooper (1979) reviewed the literature and determined the factors affecting new product success or failure. Henard and Szymanski (2001) made a meta-analysis of the articles on the subject and found that product advantage, market potential, meeting customer needs, predevelopment task proficiencies and dedicated resources have the most significant effect on new product performance. This paper, different from the aforementioned literature reviews, aims at grouping these factors into sub-topics within the borders of international marketing topic as NPD is "a prominent issue in international marketing research" (Li, 1999, p. 10).

2. Theoretical Background

There are various NPD models explaining the factors affecting NPD process. The generally used model constitutes eight steps. These steps are idea generation, idea screening, concept development and testing, marketing strategy, business analysis, product development, test marketing and commercialization (Kotler and Keller, 2006, p.254). The two key phases in this process are "initiation", covering idea generation, screening, and concept testing; and "implementation" which includes product design, test marketing and market introduction (Sivakumar and Nakata, 2003). The product is conceptualized in the initiation stage and the concept is fulfilled in implementation stage. Cooper (1994) has extended some of the phases in the process ending up in thirteen steps. These steps are initial screening, preliminary market assessment, preliminary technical assessment, detailed market study, business/financial analysis, development of product, in-house product tests, customer tests, test market/trial sell, pilot or trial production, pre-launch business analysis, production start up and market launch.

The product innovations can be placed on an innovation continuum. At the one end of the spectrum are radical innovations where the products new both to the firm and the market are developed. At this stage, initiation is more important than implementation. Routine innovations are at the other end of the spectrum. Here, products which have already been developed by competitors but new to the firm are developed. Routine innovations can be line extension, imitation of existing products or small modifications to the product. Implementation is more important than initiation at this phase (Sivakumar and Nakata, 2003).

In terms of product innovation, Veryzer (1998) developed a representation, displayed in Figure 1, with two dimensions, namely technological capability and product capability. With technological capability, the author refers to the technologically expanding capability of the product beyond the existing boundaries. Product capability, on the other hand, represents the benefits of the product perceived or experienced by the consumer.

Figure 1. Types of Product Innovation

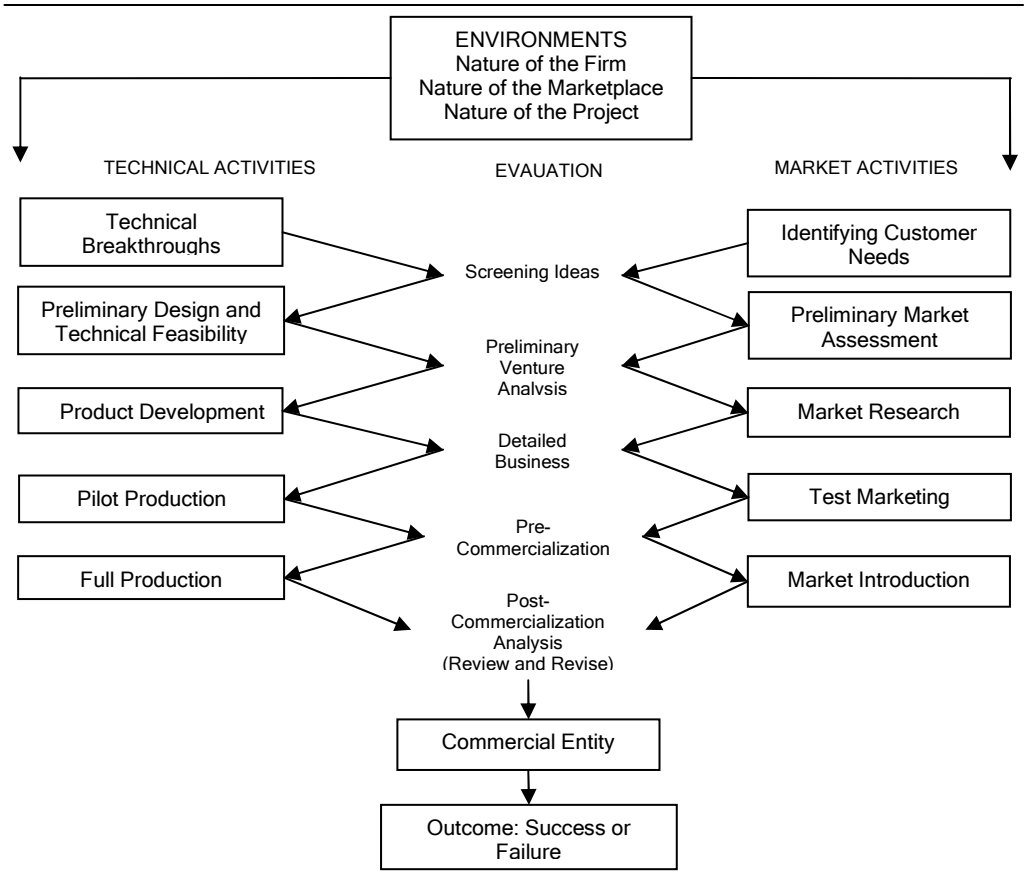
		Product Capability	
		Same	**Enhanced**
Technological Capability	**Same**	Continuous	Commercially Discontinuous
	Advanced	Technologically Discontinuous	Technologically and Commercially Discontinuous

Source: Veryzer, R. (1998).

In this model, new products that belong to the first category have the same product features and the same technological capabilities as the existing products, and they act as the extension of these already developed products. These products are new but not innovative. Other product types could be in the form where technological capability or product capability experienced by the consumer, or both of these capabilities could be innovative. These are named as technologically discontinuous, commercially discontinuous, and technologically and commercially discontinuous, respectively.

The generally used new product development model was adapted by Calantone and Benedetto (1988) and the authors have added the environmental factors, marketing activities and technical activities to the process. The interaction of these factors results in the success or failure of NPD process. The model adapted by the authors is presented in Figure 2.

Figure 2. A Model of the New Product Process



Source: Calantone & Benedetto (1988).

The models which have been developed on the topic have been grouped under five headings by Saren (1984) and the classification has provided a useful framework on the subject (Hart and Baker, 1994). The first group is “departmental-stage models” where the NPD process is viewed in terms of departments or functions and these departments of functions hold the responsibilities for the tasks that were carried out. “Activity-stage models” are the second group, which was developed on departmental-stage models. This model focuses on the actual activities, and was criticized, just like

departmental-stage models- due to its passing the parcel to the next department which was limiting the feedback process and simultaneous cooperation among departments. The third group is "decision-stage models" where NPD process is seen as evaluation of points to carry on or to abandon the projects. These models included some feedback. "Conversion process models", which is the fourth model, view NPD as a black box and tries to avoid the rationality of the models developed before. They are a collection of tasks which are not specified and which may or may not be carried out. They underline the input, which is the information in the process. This input is converted into an output in time. Yet, they are criticized due to lack of detail. The final one is "response models". Change is located at the beginning of these models, which focus on the response of individuals of organizations to change. After listing and detailing the taxonomy provided by Saren in 1984, Hart and Baker (1994) propose another model which they call "multiple convergent processing model". In this model, they emphasize the defects of the previous models and propose a framework which would overcome these defects. In their model, they highlight the simultaneous and convergent functioning of departments, not parallel functioning.

Originating from the studies that provide the models for NPD, various studies were carried out on the success and/or failure factors of this process. Hart and Baker (1994) reviewed these findings and found that three issues were reinforced and validated in these studies:

1. The need for interdisciplinary inputs,
2. The need for quality inputs to the process,
3. The need for speed in the process.

A classification of the success and failure factors has been made by Lilien and Yoon (1989). The authors have listed the factors affecting new product performance success or failure in three dimensions: a) type of innovation (product or process), b) decision focus (strategic, R&D, marketing, environmental, launch time), and c) managerial controllability (controllable, uncontrollable, static, dynamic).

Another review of the topic has been provided by Craig and Hart (1992) where they have mentioned the topics covered within the NPD process. The research approaches which they have found were the scope of the study (generalist, specialist), methodological approach adopted (qualitative, quantitative), level of analysis, whether failure or success or both is studied, the way in which success is measured (profit-based, sales-based), type of product developments investigated.

3. Research Methodology and Findings

This study presents a framework of researches carried out on new product performance. The journals were selected among SSCI journals with the selection criteria that the title of the publication should include both the words "international" and "marketing" as the aim of this paper is to determine the factors affecting NPD in international context from the perspective of marketing. Thus, the journals which comply with these criteria in SSCI were *Journal of International Marketing (JIM)*, *International Marketing Review (IMR)* and *International Journal of Research in Marketing (IJRM)*. The editorial mandates of these journals provide supportive results in terms of the conformity of these journals with the objective of this study as can be seen from their aims declared in their official web sites:

> (1) "Peer reviewed articles aimed at both practitioner and educator audiences covering international marketing practice and theory through original research articles, executive insights, and book reviews" (JIM).

(2) “IMR is the "International Marketing" Review and not an International "Marketing Review". This means it seeks to publish interesting, well-written and academically robust papers which communicate clearly on international marketing issues. It is not a general marketing journal”.

(3) “Building on a great tradition of global marketing scholarship, IJRM aims to contribute substantially to the field of marketing research by providing a high-quality medium for the dissemination of new marketing knowledge and methods”.

Following the phase where the journals are selected, the term “new product development” and “new product performance” were searched for in the abstracts of the articles. In these journals, 28 articles were found in total after eliminating the ones that could not be accessed. 7 of the articles were in *Journal of International Marketing*, 7 were in *International Marketing Review* and 14 articles were in *International Journal of Research in Marketing*. Among these, some of the articles were eliminated as they were not related to the subject, or as they were literature review articles without any model suggestions. Finally, 18 articles were left that were in line with the search purpose. The distribution of these articles is as follows: 9 of the articles were published in *Journal of International Marketing*, 4 were in *International Marketing Review* and 5 articles were in *International Journal of Research in Marketing*. The articles conforming to this criterion were grouped using categorical content analysis according to the factors used in analyzing the new product performance.

Content analysis is defined as an “objective, systematic, and quantitative” (Kassarjian, 1977, p.9) research technique which describes the contents of texts. The measurement unit may be large or small. “[It] could examine the amount of space devoted to the topic or the number of articles, a sampling of the paragraphs or sentences in the articles, or even selected key words or terms. Such subdivisions are the units of analysis” (Kassarjian, 1977, p.11). Thus, the dimensions in the models were used as units of measurement.

However, in the analysis of the articles, most of the researchers have identified the factors affecting NPD process in a different manner. With the aim of making the subject easier to be understood, some of these items were grouped together. And, many sub-items for the groups were gathered from the analysis. The items and the subgroups in which they were included are listed in Table 1. The factors illustrated reveal the fact that cross-functional integration is an important aspect in NPD. This finding supports the nature of new product development process which “demands that the innovation process operates smoothly across a number of functional areas within a firm, including marketing, research and development (R&D) and manufacturing” (Song, Kawakami and Stringfellow, 2010). The second most frequently used dimension is marketing resources and skills. This finding is in line with the role marketing plays “… in the new product process by identifying and evaluating new product ideas and working with R&D and others in every stage of development” (Kotler and Keller, 2006, p. 634).

The findings of the analysis after grouping the sub-factors affecting new product performance are listed in Table 2. Taking the study of Im, Nakata, Park, and Ha (2003) as the basis, the sub-factors were grouped under the headings of *strategic antecedents*, *organizational antecedents*, *NPD process factors* and *environmental factor*s. The models used in the studies were analyzed, and the constructs were grouped under these titles. Meanwhile, the theoretical perspectives, the methodology of the study and the country in which the research was carried out were also listed.

Table 1. The Dimensions Used in the Models Measuring NPD

market orientation (Cooper, 1994; Frambach, Prabhu, and Verhallen, 2003; Wei and Atuahene-Gima, 2009) customer orientation (Cooper, 1994; Im, Nakata, Park and Ha, 2003; Frambach, Prabhu, and Verhallen, 2003) multi-stage game plan (Cooper 1994) scope (Leenders and Wierenga, 2008) planning formalization (Im and Nakata, 2008)	*Orientation*
R&D investment (Li, 1999)	*R&D Investment*
Diversification (Jeong, 2003)	*Diversification*
exploitation capability (Yalcinkaya, Kalantone and Griffith, 2007; Atuahene-Gima and Murray, 2007) exploration capability (Yalcinkaya, Kalantone and Griffith, 2007; Atuahene-Gima and Murray, 2007)	*Exploration & Exploitation Capability*
firm size (Jeong, 2003; Lee, Chen, Kim and Johnson, 2008; Leenders and Wierenga, 2008, Wei and Atuahene-Gima, 2009) firm age (Lee, Chen, Kim and Johnson, 2008; Wei and Atuahene-Gima, 2009) firm performance (Lee, Chen, Kim and Johnson, 2008)	*Firm Features (physical)*
power (Atuahene-Gima and Murray, 2007) managerial ties (Atuahene-Gima and Murray, 2007) trust (Atuahene-Gima and Murray, 2007) solidarity (Atuahene-Gima and Murray, 2007) knowledge (Murray and Chao, 2005; Lee, Chen, Kim and Johnson, 2008) network strength (Murray and Chao, 2005) centralization (Li, 1999; Leenders and Wierenga, 2008) rewards (Im and Nakata, 2008; Wei and Atuahene-Gima, 2009) formalization (Li and Atuahene-Gima, 1999; Leenders and Wierenga, 2008) positional advantage (Carbonell and Rodriguez, 2006) managerial involvements (Im and Nakata, 2008) strategic consensus (Frambach, Prabhu, and Verhallen, 2003; Atuahene-Gima and Murray, 2007)	*Firm Features (intangible)*
marketing resources and skills (Song, Motoya-Weiss and Schmidt, 1997; Li and Atuahene-Gima, 1999; Wong, 2002; Yalcinkaya, Kalantone and Griffith, 2007) marketing activity proficiency (Song, Motoya-Weiss and Schmidt, 1997) technical resources (Wong, 2002; Yalcinkaya, Kalantone and Griffith, 2007)	*Firm Resources*
cross-functional integration (Cooper, 1994; Li, 1999; Song and Xie, 2000; Wong, 2002; Im, Nakata, Park and Ha, 2003; Leenders and Wierenga, 2008) headquarter-subsidiary integration (Wong, 2002)	*Integration*
NPD capability (Murray and Chao, 2005) NPD team profitability (Im, Nakata, Park and Ha, 2003)	*NPD Cap.& Team Prof.*
product newness (Cooper, 1994; Li and Atuahene-Gima, 1999; Song and Xie, 2000; Yalcinkaya, Kalantone and Griffith, 2007) innovation (Cooper, 1994; Carbonell and Rodriguez, 2006) product features (Cooper, 1994) product competitive advantage (Wong, 2002,)	*Product-Related*
NPD initiation process (Sivakumar and Nakata, 2003; Im, Nakata, Park and Ha, 2003) NPD implementation process (Sivakumar and Nakata, 2003; Im, Nakata, Park and Ha, 2003) cycle-time reductions (Cooper, 1994) operational efficiency (Wong, 2002) NPD resources (Leenders and Wierenga, 2008)	*Process-Related*
market turbulence (Carbonell and Rodriguez, 2006; Lee, Chen, Kim and Johnson, 2008; Murray and Chao, 2005) market homogeneity (Wong, 2002) competition (Li, 1999; Wong, 2002; Carbonell and Rodriguez, 2006)	*Market-Related*
customer satisfaction (Li, 1999) customer homogeneity (Wong, 2002)	*Customer-Related*
technological turbulence (Wong, 2002; Murray and Chao, 2005; Lee, Chen, Kim and Johnson, 2008)	*Technological Turbulence*
national Culture (Song and Xie, 2000; Sivakumar and Nakata, 2003)	*National Culture*

From Table 2, it can be deduced that organizational factors are the ones mostly analyzed in the studies where the NPD is researched. This result is in line with the nature of innovation which lies in the company itself. As innovation is defined with reference to the organization that adopts the idea, product or process and as it takes place as a response of the organization to the changes that occur in the internal and external environment, the factors related to the organization are found to be more effective in this process as expected. When the organizational factors are analyzed, it can be seen that intangible features of the firm are used more in the process within this group. This fact is also not surprising when the nature of innovation as a process involving organizational creativity, which is defined as the creation of a valuable, useful new product, service, idea, procedure or process by individuals working together in a complex social system (Woodman, Sawyer, and Griffin, 1993), is considered. Another point supporting this finding is the fact that the intangible firm features outnumber all the other sub-factors of the determinants of NPD.

Table 2. Review of Factors Affecting NPD

		Cooper, 1994	Song, Montoya-Weiss & Schmidt, 1997	Li, 1999	Li & Atuahene-Gima, 1999	Song & Xie, 2000	Wong, 2002	Jeong, 2003	Sivakumar & Nakata, 2003	Im, Nakata, Park & Ha, 2003	Frambach, Prabhu Verhallen, 2003	Murray and Chao, 2005	Carbonell & Rodriguez, 2006	Yalcinkaya, Kalantone & Griffith, 2007	Atuahene-Gima & Murray 2007	Lee, Chen, Kim & Johnson, 2008	Leenders & Wierenga, 2008	Im & Nakata, 2008	Wei & Atuahene-Gima, 2009
Strategic Antecedents	*Orientation*	✓								✓	✓						✓	✓	✓
	R&D investment			✓															
	Diversification							✓											
	Exploration & Exploitation capability													✓	✓				
Organizational Antecedents	*Firm features (physical)*							✓								✓	✓		✓
	Firm features (intangible)				✓						✓	✓	✓		✓	✓	✓	✓	✓
	Firm resources		✓		✓		✓							✓					
	Integration	✓		✓		✓	✓			✓							✓		
	NPD capability &team profitability									✓		✓							
NPD Process	*Product-related*	✓			✓	✓	✓						✓	✓					
	Process-related	✓					✓		✓	✓							✓		
Environmental Factors	*Market-related*			✓				✓				✓	✓			✓			
	Customer-related			✓			✓												
	Technological turbulence						✓					✓				✓			
	National Culture					✓			✓										

In addition to the factors determining NPD performance, the studies were analyzed in terms of their conceptual framework and methodology. From this perspective, theoretical perspectives of the articles-if any mentioned, the research methodology and the countries of the organizations analyzed were listed. The findings are presented in Table 3.

Table 3. Theoretical Perspectives and Research Methodologies of the Articles Reviewed

Article	Theoretical Perspective	Research Methodology	Country
Cooper, 1994	not mentioned	secondary data	Europe & North America
Song, Montoya-Weiss, & Schmidt, 1997	resource based view	case study + survey	South Korea-Taiwan
Li & Atuahene-Gima, 1999	sociopolitical theory	survey + interview	China
Li, 1999	contingency theory	survey	USA
Song & Xie, 2000	contingency theory	survey	Japan-USA
Wong, 2002	not mentioned	literature review	-
Im, Nakata, Park, & Ha, 2003	not mentioned	survey	Korea-Japan
Frambach, Prabhu, & Verhallen, 2003	generic strategies	survey	Netherlands
Sivakumar & Nakata, 2003	not mentioned	modeling + simulation	-
Jeong, 2003	not mentioned	interview + survey	USA-China
Murray & Chao, 2005	resource based view	no empirical research, just propositions	-
Carbonell & Rodriguez, 2006	resource based view	survey	Spain
Yalcinkaya, Kalantone, & Griffith, 2007	resource based view	survey	USA importers to Japan
Atuahene-Gima & Murray, 2007	social capital theory	survey	China
Lee, Chen, Kim, & Johnson, 2008	resource based view + network theory	survey	USA
Leenders & Wierenga, 2008	not mentioned	survey	USA-UK-Japan-Switzerland-Germany
Im & Nakata, 2008	source-position-performance theory	survey	USA
Wei & Atuahene-Gima, 2009	contingency theory	survey	China

From the information detailed in Table 3, it could be inferred that most of the studies used survey method to reveal the factors affecting NPD process and performance. And the theoretical bases lie mostly on resource-based view and contingency theory. The resource-based view holds that the organization is a unique bundle of accumulated tangible and intangible resources, which are valuable, rare, imperfectly imitable and substitutable (Barney, 1991). These resources can be in the forms of specific assets, capabilities, knowledge, etc. The resources are also considered as the source of direction and profitability (Grant, 1991). Barney (1991) frames the actions of firms in a model where firms obtain competitive advantage by implementing strategies that exploit their internal strengths, respond to environmental opportunities, neutralize external threats and avoid internal weaknesses. This theory holds that firms are identical in their resources. However, the heterogeneity that is developed would be short-lived as these resources are also mobile. They provide

competitive advantage to the company as these resources could not be replicated by the competitors.

Contingency theory, on the other hand, stems from the work of Burns and Stalker (1961) and Woodward (1965) (Kay, 2003). This theory states that there is no best form of organization and the success of the organization depends on the match between the organization and its environment (Kay, 2003). From this perspective, there is a match between the contingency theorists and financial economists, as they both support the view that there is no universal prescription for success. If there were, this would reduce their value to everyone. And these two approaches lead to the conclusion that the success of strategy lies in the creation and maintenance of distinctive capabilities.

One of the studies (Li and Atuahene-Gima, 1999) in Table 3 is listed as using sociopolitical theory, which is a less frequently used approach. It suggests that politics are important in determining the success or failure of innovation. The usage of this theory is also in line with the theories of the same period, where contingency theory prevailed. Porter's generic strategies, which provide a positioning framework of the firm according to market conditions and competitors, is used in another study (Frambach, Prabhu, and Verhallen, 2003). Porter's approach also takes environmental conditions as the basis, and requires suitable positioning, that is a match between the firm and the environment.

From the results of the Table 3, it can be deduced that resource-based view has begun to overpower in the strategic perspectives of the firms. From the articles, covering a period of approximately two decades, it can be deduced that whereas the firms were more customer and market oriented at the beginning of 1990s, they have turned to themselves and to their resources at the beginning of 2000s in terms of NPD. They have started to highlight the advantages specific to them in new product development process. In the last decade of the 20th century the circumstances shaping the firms were mostly about market and customers; however, at the beginning of the 21st century, circumstances shaping NPD process were mostly organizational, where it intersects with resource-based view. This deduction is consistent with various similar studies in the literature (e.g. Kleinschmidt, de Bretani, and Salomo, 2007)

From the analysis of methodology, the USA is seen as the most frequently analyzed country with China following it, which is not surprising as it is one of the major and fastest developing economies of the last decade, improving in every aspect of global business arena. In terms of methodology, the findings were gathered mostly via survey, except for a few studies where secondary data or simulation method is used. This result implies that the findings of the studies rely on real data that is collected from companies involved in NPD process. It can be concluded that this method provides more specific results when compared to secondary data or simulation method.

4. Conclusion

One of the widely discussed and mentioned topics of the twenty-first century is innovation as it is a crucial process for most of the businesses in the globalized arena of today. With this respect, new product development is central for firms as it is "vital for long-term survival and viability" (Song, Montoya-Weiss, and Schmidt, 1997) and "[it] shapes the company's future" (Kotler and Keller, 2006, p. 633). Therefore,

management is looking for ways to improve productivity and product innovation as an important tool in this process.

There is a wealth of knowledge on NPD. Some of the studies conceptualized the new product development phases (e.g. Calantone and Benedetto, 1988; Sivakumar and Nakata, 2003), some researchers studied the models developed on the topic (e.g. Saren, 1984), and various studies analyzed the factors affecting NPD process from different perspectives (e.g. Cooper 1994; Wong 2002; Im, Nakata, Park, and Ha 2003; Leenders and Wierenga 2008).

This study traces the models developed on new product development. For this purpose, studies that were published on SSCI journals, were selected. Among these journals, articles on NPD were studied and the models used in the studies were grouped.

The preliminary grouping of the dimensions used in the models reveal the fact that cross-functional integration is an important determinant in NPD process. Following this dimension comes marketing resources and skills. However, when these dimensions are classified in sub-groups, the intangible firm features appear as the most frequently used sub-group. These sub-groups are again classified into groups according to the study of Im, Nakata, Park, and Ha (2003). The results of this grouping reveal that organizational antecedents are the most widely discussed dimensions of NPD process. The shift in the theoretical perspective of the studies provides supporting results as resource-based view have begun to overpower in the researches in the last decade. The dominance of organizational factors, therefore, should not be considered unexpected.

As NPD is a vital and risky process due to the hundreds of millions it can cost in case of a failure, its determinants should be carefully analyzed. And although the factors affecting NPD are important as a group, the scrutiny of individual dimensions would provide a better understanding for the success of NPD. Moreover, determination of the dimensions which are critical for the success can provide useful insights and suggestions for management into the screening decision.

The main limitation of this study is including only the articles published in the journals selected on predetermined criteria. Thus, relevant articles published in other journals were left uncovered. Therefore, the future research on this topic could include other journals where this topic is discussed. Moreover, a multi-perspective approach could be employed to test the perspectives of diverse disciplines. Also, a model incorporating the most important dimensions could be tested in the international context.

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