A Conceptual Framework of Implementing Business Strategy for the NPD Process

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ABSTRACT

Business strategy is an evolving concept in the research literature of product management. NPD process in both practice and academic literature tends to focus on the pursuit of tactical goals, whereas we argue that prioritizing strategic over tactical goals is overall beneficial. The pursuit of strategic goals tends to be implicit, whereas we show the benefits of making them explicit for more successful market outcomes. In this study, we conduct eight case studies from different industries to investigate the strategy of new product development process. We find that such processes typically use the following four strategies: product superiority, product time-to-market, customer intimacy, and product cost advantage. Besides providing a guideline to a product team in effectively performing process activities, these strategies are used as a mechanism to deploy business strategy to the operational level of product management. We also find that, in many cases, to attain better business results, product teams use a combination of these strategies with different priority levels.

Keywords: Product management; New product development (NPD) process; Business strategy; Strategic types.

1. INTRODUCTION

In product management research, for decades, researchers and practitioners have been searching for a better way to manage products. Several researchers proposed new tools and techniques (Calantone et al., 1999; Leach, 1999; Kessler, 2000), while others conducted extensive study on process (Spivey et al., 1997), product success (Pinto and Slevin, 1989; Shenhar et al., 2001; Balbontin et al., 1999; Benedetto, 1999), product team and leadership (Frame, 1999; Lynn et al., 1999; Thamhain, 2004; Jassawalla and Sashittal, 2000), and product typology (Wheelwright and Clark, 1992; Shenhar, 2001). Even so, scholars and practitioners agreed that many products were managed in an ineffective way and a high percentage of products failed (Dechadilok and Suksawang, 2017). This high failure rate leads to a tremendous loss in productivity, profitability, and employee morale.

Recently, several researchers have focused their attention on the strategic aspect of product management (Cleland, 1998; Shenhar, 2004). They argued that an effective way to manage a product is to understand the business objective of the product and link it to product management (Frame, 1999; Patanakul and Milosevic,

2005; Thieme et al., 2003; Suikki et al., 2006). In particular, this means that product managers should have strategic mindset. They should understand an organization's business strategy and an adaptation of product management to support that strategy. While the concepts of strategic product management are useful, the truth is that limited research has been done in this area. In strategy literature, researchers have extensively studied the business-level strategy.   Research on the deployment of business-level strategy to product management (operational level) is rather limited. This is an important area of research and deserves attention of researchers and practitioners. Recent research studies indicated that a good fit between business strategy and functional strategies (such as product management) can improve the organizational performance (Chan and Huff, 1993; Luftman et al., 1993).

To respond to the research need, this study explores the concept of product management strategy.   Instead of focusing on a business-level strategy, our emphasis is on a strategy of functional or operational level, a.k.a. strategy for managing products or product strategy (Shenhar and Poli, 2003). In particular, we investigate the product strategy of new product development process. Our objectives are: 1) to investigate whether business strategies do, formal or informal, exist in companies, and if they do exist, 2) how are the strategies used, 3) what are the types of those strategies, and 4) to develop a theoretical framework for the process of using product strategy. The research findings are expected to provide a better understanding to manage NPD processes for better market results.

2. BACKGROUND

2.1 Strategy in the Organization Context: Business strategy

In general management literature, several numerous scholars extensively conducted research on organizational strategy, resulting in numerous definitions and frameworks. For example, business strategy can be defined as the determination of basic long-term goals of an enterprise and the adoption of courses of action and the allocation of resources necessary to carry out those goals (Chandler, 1962).   Ansoff (Ansoff, 1965) suggested that business strategy are rules for making decisions determined by product/market scope, growth vector, competitive advantage, and synergy.   Quinn (Quinn, 1980) defined a strategy as "the pattern or plan that integrates an organization's major goals, policies and action sequences into a cohesive whole." He also indicated that a well-formulated strategy would help an organization allocate its resources in a unique way according to 1) its internal competencies and shortcomings; 2) the anticipated changes in the environment; and 3) the contingent moves by its competitors. Along the same line as Quinn's definition, Wright et al, (Wright et al., 1992) defined the organizational strategy as "top management's plans to attend outcomes consistent with the organization's missions and goals."

In several of his works, Mintzberg (Mintzberg, 1994; Mintzberg et al., 1999) prefers using various definitions of strategy. He proposed that strategy is a plan to establish direction for organizations, a ploy to employ maneuvers to gain advantages, a pattern to generate steam of actions to achieve consistency in an organization's behavior, a position to encourage the perception of organizations in their competitive

environments, and a perspective to raise questions about intention and behavior in a collective context (Mintzberg et al., 1999).

In terms of strategy typology, Miles and Snow's (Miles and Snow, 1978) strategies' typology includes reactors, defenders, analyzers, and prospectors. Porter (Porter, 1980; Porter, 1985; Porter, 1996) describes strategy as the creation of a unique and valuable position, involving a different set of activities, and categorizes generic strategies into cost leadership, differentiation, and focus. Treacy and Wiersema (Treacy and Wiersema, 1995) proposed operational excellence, product leadership, and customer intimacy as strategy typology. Besides the definitions and frameworks of organizational strategy, many scholars have studied alignment and performance relationships across organizational hierarchy: corporate, business, and function (Youndt et al., 1996; Papke-Shields and Malhotra, 2001). They argue that a good fit between business strategy and functional strategies can improve the organizational performance (Chan and Huff, 1993; Luftman et al., 1993). The functional strategies include, e.g., manufacturing, information technology, and R&D strategies, and project management.

2.2 Strategy in the New Product Development Context

In new product development, the literature on strategy centers mostly on product development strategy and product launch strategy. Being conducted in high competitive business environments (Chaturvedi and Rajan, 2000), NPD projects are often implemented for business purposes (Bowen et al., 1994; Pennypacker and Dye, 2002; Thieme et al., 2003). Several studies therefore suggested that the organizations should have product development strategy that supports the organizational strategic direction and goals (Methe et al., 1997; Karlsson and Ahlstrom, 1997). Studies showed that a proper development strategy with a combination of a proper NPD process leads to the increase in the NPD performance and firm's performance (Firth and Narayanan, 1996; Barczak, 1995). In addition to product development strategy, the organization should have appropriate product launch strategy that helps maximize the chances of profitably achieving acceptance in the target market (Guiltinan, 1999). Studies found that product launch strategy are related positively to new product performance and the organizational performance (Langerak et al., 2004; Hultink et al., 1997; Hultink and Robben, 1999). These strategies are considered as business-level strategies. The literature of strategy in the operational level, a.k.a. a strategy for effectively leading NPD projects is rare.

2.3 Strategy in the Product Management Context: Operational Level

In product management, studies with regard to strategy are rather limited, even though products are typically perceived as operations that will implement strategies into action. Several works related to strategy, were in the context of product selection (Englund and Graham, 1999). These studies suggested that products should be selected (as parts of a portfolio) to support the organizational strategy. The reason is, as suggested by Cleland and King (Cleland and King, 1983), product management is "a tool for executing overall organizational strategy." How this tool, a.k.a. product,

should be used strategically to help accomplish the organizational strategy after the product selection process was rarely researched.

It was not until recently that many researchers center their works on strategic issues in product management. Shenhar (Shenhar, 2004) studied over 120 products in various industries and concluded that a more strategic approach was needed for products. Product managers should be perceived as leaders who must manage their products for better business success and for winning in the market place. A similar conclusion was reached by Morris and Jamieson (Morris and Jamieson, 2005). Shenhar (Shenhar, 2004) also argued that to be able to lead a product for better business success, a product manager needs to implement business strategy. He asserted that the product strategy should be developed to bridge a gap between business strategy and product plan (operation). Nevertheless, product strategy is an evolving concept in research literature of product management.

Along the same line as the definition of organizational strategy proposed by Quinn (Quinn, 1980) and Mintzberg (Mintzberg, 1994; Mintzberg et al., 1999), Shenhar et al. (Shenhar et al., 2005) described a product strategy as "the product position, and the guidelines on what to do and how to do it, to achieve the highest competitive advantage and the best value from the market outcome."

Based on this definition, product strategy is a combination of several elements. Product strategy is the perspective to create the proper view and approach to the product and to help understand the impact of the product to its stakeholders. It is the position that will encourage the product team to realize the competitive advantages that can be accomplished from the market outcomes. In addition, the product strategy is the direction and guidelines that will define the path that the product team should take to achieve the market results. This will direct the behavior of the team. Table 1 illustrates the component of product strategy.

Table 1: The elements of product strategy (Shenhar et al., 2005)

Product Strategy Components		Description
The Perspective	Business Perspective	The business motivation for implementing this product or producing products
	Objective	The ultimate business goals of the product
The Position	Product Definition	The description of products, including their specifications
	Competitive Advantage/Value	The reasons why the products are better than other products and the value the products create
	Success and Failure Criteria	The perspective and expectations that the organization has for the product

| *The Direction and Guidelines* | Product Definition | The product boundaries, scope of work, product deliverables, and product type |
| | Strategic Focus | The mindset and guidelines for behavior to achieve the product's competitive advantage and value |

3. RESEARCH METHODOLOGY

3.1 Design and Sampling

This study is an exploratory in nature. We use guiding propositions in accordance with Eisenhardt's advice (1989) as a framework for investigating the concepts of product strategy in real-life settings. To achieve the research objectives, we conduct case study research to explore the issues of product strategy. This particular methodology is appropriate since research in this area is rather limited and the perspective on the issue is inadequate. At this phase of the study, we focus on product strategies of new product development processes, whose products were competing in the open markets. With theoretical sampling, in total, we conducted eight case studies in various disciplines, including pharmaceutical, manufacturing (chemical, electronic equipment, and consumer products), and software development.

We interviewed more than 40 persons from different organizational levels from executives to product managers to product team members of each product by using a guiding questionnaire. Product documents were also reviewed if they are available. For each case, the information from the interviews and document review were compared to enable triangulation, with-in case analysis was conducted. For each product, the case study was written. Then, we performed cross-case analysis to identify the similarities/dissimilarities among cases (Yin, 1984; Eisenhardt, 1989).

3.2 Linking Theory to Research: Our Guiding Propositions

Do companies use a construct equal or similar to the product strategy? If they use, how far are they in that use? If they do not use, what they use as a proxy? We obviously have more questions about product strategy than answers. We are thinking that these questions are not sufficient to lead through this research. Therefore, we decided to use what Eisenhardt (1989) terms guiding propositions, intellectual devices

not based on facts but on our best knowledge and common sense before research with the purpose leading us through this research. We, thus, came to state the following guiding propositions.

Our intuition, and mostly conceptual writings, tells us that companies must use some device to direct their product management in line with the organization's business perspective. Such device may be concept of product strategy, which may be considered as strategy in an operational level that will help guide product management activities. However, we need to investigate to what extent that product strategy is implemented in practice and to what extent that it is consistent with the business strategy.

4. DATA ANALYSIS AND RESULTS

Research results and discussion are presented in four parts, each one for one research objective 1) to investigate if such strategies exist in companies, and if they do exist, 2) how are the strategies used, 3) what are types of those strategies, and 4) to develop a theoretical framework for the process of using project strategy. Along with the discussion, we also suggest some propositions that can be used as a basis for future research.

4.1 The Existence of Product Strategy

Pursuing objective one, in our analysis - to investigate if product strategies exist in companies - we found the evidence that, mostly, product strategy existed but in an implicit manner and to different details of depth. In all of the cases we studied, product managers and team members had a strategic mindset, meaning they met our criterion of understanding business strategy of their organization and adapting product management to support that strategy. They had their perspectives, which usually linked to the business perspectives or objectives of the organization. In fact, having the perspectives helped them understand the business purposes of their organization and the impact of their products on the organization. Also, product managers and team members understood their products' position. In other words, they realized the competitive advantages and values of their products. This included a metric to measure the success of products. Perspective and position helped product managers develop the direction and guidelines for how to work on products to generate better market results. We consider the integration of the perspective, position, and guidelines in a coordinate way as a product strategy.

4.2 How the Project Strategy Is Used

One purpose of the project strategy (refer to the objective two) is to help product managers from our sample as guidelines to manage products. We, however, could see that the execution of products carries some challenges. So, using the strategy properly when it comes to implementing products depends on its scope and depth. For instance, in terms of the scope, the strategy that has success criteria as the strategy component is probably more difficult to attain than a strategy that does not have the criteria as a component (one would be surprised by a large number of products that do not have success criteria).

Similarly, in terms of the product strategy depth, it is probably more challenging to make the strategy happen as it becomes deeper. Put it into an example language, it is probably tougher to realize the strategy that some projects in our sample had, one strategy with more precise success measures, than one that does not. Apparently, with properly designed and deployed product strategy as guidelines there is higher likelihood to more effectively manage the product. Conversely, substandard designed and deployed product strategy may be less effective management aid.

4.3 Forms of Project Strategy: To be Consistent with Business Strategy

Our analysis showed that a product development process was managed in consistency with the business strategy of organizations, resulting in various forms of product strategies. Based on competitive advantages gained from products, we primarily categorized product strategies into product superiority, product time-to-market, customer intimacy, and product cost advantage strategies (refer to the objective three).

5. IMPLICATIONS OF THE STUDY

The results of this study bear several significant implications. First, to successfully manage products, product managers and team members should have a strategic mindset. The NPD process should be managed with formal business strategies. This means that a product strategy should be developed as part of a formal process. This will help deploy business level strategy to operation, a.k.a. product management. What we suggest are 1) NPD process should be selected based on product development strategy. 2) An appropriate product manager should be assigned to the product. 3) Product team should be formed. 4) As part of a product plan, a product strategy should be formally developed and documented. 5) Product strategy should be reviewed regularly as part of formal product management process. In other words, we suggest that the product team should explicitly develop and use product strategy and make sure that it is understood by both the team members and

stakeholders. Having product strategy would help product teams react appropriately to product situations, make right trade-off decisions, develop common team spirit and culture, etc.

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