Strategic Management of New Product Development Projects

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Abstract--**Strategic management of projects is an evolving concept in research literature of project management. In this study, we investigated the implementation of strategic management particularly in new product development projects to determine its existence and its forms. We found that such projects typically use the following four strategies, product superiority, product time-to-market, customer intimacy, and product cost advantage. Besides providing a guideline to a project team in effectively performing project activities, these strategies are used as a mechanism to deploy business strategy to the operational level of project management. We also found that, in many cases, to attain better business results, project teams use a combination of these strategies with different priority levels.**

I. INTRODUCTION

In project management research, for decades, researchers and practitioners have been searching for a better way to manage projects. Several researchers proposed new tools and techniques [1-3], while others conducted extensive study on process [4] , project success [5-8], project team and leadership [9-12], and project typology [13, 14]. Even so, scholars and practitioners agreed that many projects were managed in an ineffective way and a high percentage of projects failed. 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 project management [15, 16]. They argued that an effective way to manage a project is to understand the business objective of the project and link it to project management [9, 17, 18]. In particular, this means that project managers should have strategic mindset. They should understand an organization's business strategy and an adaptation of project management to support that strategy. While the concepts of strategic project management are useful, the truth is that not much research has been done in this area. In strategy literature, most researchers have been extensively studied the business-level strategy. Research on the deployment of business-level strategy to project management (operational level), is rather limited.

Is strategic project management in this sense significant to deserve attention of researchers and practitioners? Recent research studies indicated that a good fit between business strategy and functional strategies (such as project management) can improve the organizational performance [19, 20]. Therefore, our research of strategic project management is relevant topic.

To respond to the research need, in this study, we conducted research to further explore the concepts of strategic aspect of project management. Instead of focusing on a business-level strategy, our emphasis was on a strategy on a functional or operational. level, *a.k.a.* strategy for managing projects or *project strategy* [21]. We intended to explore whether such strategies, formal or informal, exist, and if so, how they look like. Also, we are interested in types of project strategies. In sum, our objectives were 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 . In particular, we investigated the project strategy of new product development projects. The research findings were expected to provide a better way to manage NPD projects for better business results.

II. BACKGROUND

This study is intended to understand strategy in the organizational context, so that the following topics are reviewed. We started to review business strategy, follow by strategy in the new product development context, and then strategy in the project management context at operational level.

A. 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 [22]. Ansoff [23] suggested that business strategy are rules for making decisions determined by product/market scope, growth vector, competitive advantage, and synergy. Quinn [24] 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*, [25] defined the organizational strategy as "top management's plans to attend outcomes consistent with the organization's missions and goals."

B. Strategy in 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 [26], NPD projects are often implemented for business purposes [17, 27, 28]. Several studies therefore suggested that the organizations should have product development strategy that supports the organizational strategic direction and goals [29, 30]. 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 [31, 32].

C. Strategy in the Project Management Context at operational level

It was not until recently that many researchers center their works on strategic issues in project management. Shenhar [16] studied over 120 projects in various industries and concluded that a more strategic approach was needed for projects. Project managers should be perceived as leaders who must manage their projects for better business success and for winning in the market place. A similar conclusion was reached by Morris and Jamieson [33]. Shenhar [16] also argued that to be able to lead a project for better business success, a project manager needs a project strategy. He asserted that the project strategy should be developed to bridge a gap between business strategy and project plan (operation). Nevertheless, project strategy is an evolving concept in research literature of project management.

III. RESEARCH METHODOLOGY

This study was an exploratory in nature. We did use guiding propositions (to be shown below) in accordance with Eisenhardt's advice (1989) as a framework for investigating the concepts of project strategy in real-life settings. Based on our guiding propositions, the objectives of this research were 1) to investigate if such strategies exist in companies, and if they do exist, 2) how are the strategies used, and 3) what are types of those strategies. To achieve the research objectives, we conducted case study research to explore the issues of project strategy. This particular methodology was appropriate since the studies in this area were rather limited and the perspective on the issue was inadequate. At this phase of the study, we focused on project strategies of new product development projects, whose project products were competing in the open markets.

A. Design and Sampling

With theoretical sampling, in total, we conducted eight cases in various disciplines, namely pharmaceutical, manufacturing (chemical, electronic equipment, and consumer products), and software development. Table 1 illustrates the description of the cases.

By following the case study research methodology, we interviewed, more than 40 from persons from different organizational levels from executives to project managers to project team members of each project by using a guiding questionnaire. Project 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 project the case study was written. Then, we performed cross-case analysis to identify the similarities/dissimilarities among cases [34, 35].

B. Guiding propositions

There are research questions for project strategy that call for findings. Those questions are: Do companies use a construct equal or similar to the project strategy? If they use, how far are they in that use? If they do not use, what they use as a proxy? We are thinking that these questions are not sufficient to lead through this research. Therefore, we decided to use what Eisenhardt [35] 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.

TABLE 1: CASE DESCRIPTION

Case name	Product	Project duration	Project budget	Project definition
A/HW	Crack-free, polymer-based resin, for copper wire coating	6 months	Not specified	R&D to commercialization of resin coating for copper wire
B/RB	Heart-burn relief tablets	18 months	$270k (w/o clinical study)	Development of premium non-prescription medication
C/UX	Special skincare products for preventive treatments	2 years, 1st phase	Multimillion dollars per year	Development, manufacturing, and launching skincare products
D/QR	FDA approved, non-prescription cream for cold-sore treatment	10 months	Confidential	Manufacturing of premium non-prescription medication
E/AS	Electronic testing equipment with new capability	8 months	$470k	Design and manufacturing of products
F/AUS	Electronic equipment with additional features and interfaces	12 months	$500k	Design and manufacturing of products
G/LT	New software application for game terminal	15 months	$800k	Development and implementation of a new software
H/ BS	Software for project management document control process	7 months	Not specified	Development, testing, and release of software package

Guiding Proposition 1: *Project strategy does exist as a means to direct project management in tune with the organization's business perspective.*

Guiding Proposition 2: *Project strategy has been used to deploy business level strategy to project management.*

Guiding Proposition 3: *Different forms of project strategy are consistent with different forms of organization's business strategies*.

IV. RESULTS AND DISCUSSION

Research results and discussion are presented in three 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, and 3) what are types of those strategies. Along with the discussion, we also suggest some propositions that can be used as a basis for future research.

A. The Existence of Project Strategy

In our analysis - to investigate if project strategies exist in companies - we found the evidence that, mostly, project strategy existed but in an *implicit* manner and to different details of depth. In all of the cases we studied, project managers, including project team members, had a strategic mindset, meaning they met our criterion of understanding business strategy of their organization and adapting project 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 projects on the organization.

Also, project managers and team members understood their projects' *position*. In other words, they realized the competitive advantages and values of their project products. This included a metric to measure the success of projects. Perspective and position helped project managers develop the *direction and guidelines* for how to work on projects to generate better business results. We consider the integration of the perspective, position, and guidelines in an integrative way as a project strategy.

Based on this brief summary and cases themselves we can draw some inferences. First, while all have some form of the project strategy, these strategies are rather basic and the companies use them simplistically. By this we mean that they have or don't have all elements, sometimes very few, and elements of different degree of definition, resulting in project strategies of varying scope and depth. Project strategy scope means how many components it has.

Companies having all components had full scope, while those missing more or less components (such as success measures and strategic focus), had more or less sketchy scope. Project strategy depth is its degree of its deepness; e.g. some companies did have very precise success criteria and, thus, deep strategy, while some companies had few, imprecise success criteria, and, hence, the shallow strategy.

Finding that the project strategy the way it is used in companies is informal, of varying scope and depth is, to the best of our knowledge, is not available in any published research. So, this is a new finding. It points to a serious need for companies to invest efforts to improve the use of the project strategy and make it part of management know how. Finally, this finding is in accordance with the guiding proposition 1, which we defined on the basis of common sense before this research was done. On the basis of all related arguments, we state:

Proposition 1*: Project strategy at this time is informal, and of varying scope and depth*

B. How the Project Strategy Is Used

One purpose of the project strategy is to help project managers from our sample as guidelines to manage projects. We, however, could see that the execution of projects carries some challenges. Consequently, using the strategy properly when it comes to implementing projects 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 (a large number of projects that do not have success criteria).

Similarly, in terms of the project 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 project strategy as guidelines there is higher likelihood to more effectively manage the project. Conversely, substandard designed and deployed project strategy may be less effective management aid.

Our expectation was that tactically the project strategy would be used for its intended purpose. And, it was. However, we did not suspect that its use as guidelines for effective project management might be less than expected because the strategy's often inadequate scope and depth. For that reason, the actual usage of the project strategy was less fruitful than it is designed for. Again, we think this is so because of the newness of the concept of the project strategy, and different uses by different companies. Therefore, it will take some time to clean up and standardize the meaning of the strategy.

We tried very hard to validate or contradict this finding. Intense literature search did not help us – no, we did not find any writings about this topic. So, for the time being, we believe that this finding is new, waiting for more research in this area.

Proposition 2: *Project strategy may serve as guideline for effective PM in NPD projects.*

Strategically, the project strategy should help us translate an organization's business perspective into project management. Not all of them have strategic mindset, but

tactical using the strategy only as a roadmap with the set of instructions – or, a set of guidelines for effective management of projects - for the project to accomplish its intent. Not all of them are able to use the strategy to reflect their organization's business perspective and business strategy. Is this surprising?

We think it is not. Because most of companies for a long time have had only tactical standard of excellence: for project managers - deliver a project within "the triple constraints" that is, within a specified budget, time and quality; for project management processes built around the triple constraints, and for culture developed around the triple constraints. Shifting from the tactical to strategic standard of excellence, deliver a project within strategic goals – sales revenues, market share, profitability, etc. – as some companies from our sample do is tantamount to a leap of faith.

In addition, scope and depth of the project strategy may pose a threat to the project strategy's translating an organization's business perspective into project management. Similar to the tactical use of the project strategy, using the strategy properly depends on its scope and depth. For instance, in terms of the scope the strategy lacking strategic focus component and some relevant success criteria is probably makes more difficult to accomplish such a strategy. The same analogy holds true for the project strategy depth.

Then, obviously, with properly designed and deployed project strategy as guidelines there is higher likelihood to more effectively manage the project. Conversely, substandard designed and deployed project strategy may be less effective management aid. Therefore, we state:

Proposition 3: *Project strategy may help deploy the organizational business perspective into PM on NPD projects.*

We learned during our within-case and cross-case analysis that operating conditions often influence the project strategy in the course of the project execution. The operating conditions refer to the actual conditions of project implementation, tactical or strategic, which may be equal to those assumed in the project planning phase or different from them as a consequence of changes in the environment (e.g. project status, staffing levels, market shift, etc.). We discerned that all companies in the sample expected that the operating conditions of their studied projects support the business strategies by helping adapt the business strategy and its competitive attributes because of environmental changes. This is a reciprocal relationship where project strategy not only supports but also influences the business strategy.

Therefore, by the time the project was finished, operating conditions of the project changed (the market shifted), and there was no longer a place for the product of this project. As a consequence product sales were way below the objective of the sales. The lesson is that the involved team and management should have noticed the change in this strategic operating condition and should have adapted the business and project strategy and aligned them. They did not. When they realized the need for the adaptation and alignment, it was too late.

Proposition 4: *Project strategy needs to be updated in tune with the operating conditions of NPD projects.*

C. Forms of Project Strategy: To be Consistent with Business Strategy

Our analysis showed that a product development projects were managed in consistency with the business strategy of organizations, resulting in various forms of project strategies. Based on competitive advantages gained from projects, we primarily categorized project strategies into product superiority, product time-to-market, customer intimacy, and product cost advantage strategies.

The team pursuing "product superiority strategy" put more emphasis on developing product with superior quality, functionalities, features, etc., while "product time-to-market strategy" led the project teams to focus more on product launch date, either within the window of opportunity or being first in the market. "Customer intimacy strategy" directed the project teams to pay attention to the development of close relationships with the customers. The expectation was that these strong relationships would lead to future business opportunity. In addition, the evidence from our cases showed that another form of project strategy, namely "product cost advantage," also exists.

With this strategy the team would attempt to produce a low cost product. This would lead to a primary focus on the project budget. However, the teams in our case studies pursued this strategy with a low level of priority. Therefore, we propose:

Proposition 5: *To be consistent with business strategy, various forms project strategies are used for managing new product development projects.*

Based on cross-case analysis, we discuss different project strategies of new product development projects as follow:

1. Product Superiority

We found from the case that a project team pursuing "product superiority strategy" puts its emphasis on the superior product characteristics. The team strives for the product with specifications that not only meet but also exceed the expectations of the customers. To do so, the team focuses on research and development activities of the project. Extra time and money can be spent to achieve products with desired features and functionalities.

Because superior characteristics of the project products were the main focus, project monitoring and control were developed around the product characteristics. During the entire project life cycle, product quality and performance were reviewed often. Customers also were involved in the review process. Product testing was done extensively and, as already mentioned, extra money or resources could be spent for better product performances with a "getting the product out as soon as possible" attitude.

Proposition 5.1: *Product superiority strategy is used when managing NPD projects to help the team perform project activities with more focus on product superior characteristics than project schedule and cost.*

2. Product Time-to-Market

With a "product time-to-market strategy," we found that a project manager leads a project team with an emphasis on project schedule. Usually, the schedule, including project milestone is linked to the product launch date. With this project strategy, the scope of the project, product quality, and project cost can be compromised. Table 2 summarizes the elements of the "product time-to-market strategy," including evidence from the cases.

Perspective: The project teams pursuing "product time-to-market strategy" understood the potential of the revenue gained by launching project products within the allotted time. This included launching products within the window of opportunity (D/QR) or first to the market (E/AS and F/AUS). We found that this perspective was linked to the company's business purpose of new market expansion by either introducing new products to the market (D/QR) or introducing derivative products to the existing market (E/AS and F/AUS).

Position: The competitive advantage from launching products within the allotted time was understood by the project team pursuing this project strategy. We found that, in D/QR case, launching the new effective cold sore treatment cream before winter arrives (window of opportunity) and, in both E/AS and F/AUS cases, being first in the market with products with new capability could lead to the potential of high revenue generation. In terms of success measure, pursuing time-to-market strategy, in a short run, the projects were measured primarily on time dimensions (D/QR, E/AS, and F/AUS). However, the project teams had to focus also on customer satisfaction. In other words, the projects would be considered successful if the products were introduced to the market within an allotted time and satisfied customers. In the long run, the revenue generation from products would be measured to evaluate the contribution of the projects to the business success.

Direction and guidelines: We found that, with the "product time-to-market strategy," the project teams focused on project schedule, since they knew that time was critical for business results; in other words, delays were unacceptable. At the beginning of the project, the team tended to not spend much time on developing detailed scope of the projects; more detailed scope was developed as the projects progressed. However, the team preferred to freeze the scope as early as possible to be able to work against time. In terms of scheduling, project activities were overlapped as much as possible in order to achieve the purpose of being first to the market or launching the project within the window of opportunity. With this overlapping schedule, the team sometimes worked without full approval of the previous milestones. This strategy demanded excessive communication among the team members. In addition, schedule risks were highly emphasized. Mitigation strategies and contingency plans were developed to alleviate these risks.

TABLE 2: EVIDENCE OF CASES USING "PRODUCT TIME-TO-MARKET STRATEGY"

		Case D/QR	Case E/AS	Case F/AUS
Perspective	**Business Perspective**	Market opportunity exists in this product category, leading to potential gain in sale revenue	Opportunity to generate revenue from new market expansion	A potential of revenue generation from new markets, both local and international
	Objective	To gain financial benefit by purchasing an "almost approved by FDA" formulation and bringing it to commercialization	Increase revenue by introducing an existing product with additional feature to the market within the allotted time	To increase revenue by improving market share and introducing the product to the new overseas market
Position	**Product Definition**	Non-prescription cream for cold sore treatment	Existing electronic testing equipment with the new audio monitoring capability	An existing product with additional features and interfaces
	Competitive Advantage/Value	- Revenue gained from product launched before winter - Effective cream for cold sore/fever blister, approved by FDA, for better and safer treatment	- Product delivery within the allotted time - New audio feature that meets or exceeds the products of competitors	- Product time-to-market - Some product features are better than the competitors' products
Direction and guidelines	**Project Definition**	Manufacture and launch non-prescription cold sore treatment medication	Design and manufacture product with new feature and bring it to markets	Upgrade an existing product by adding new feature and bring it to markets
	Success and Failure Criteria	- Schedule tied with window of opportunity; launched before winter arrives - Product quality per specification	- Meeting project schedule - Creating value to the customer	- Project schedule - Product specifications that met customers' requirements
	Strategic Focus	Proactive project management approach to launch a product within the window of opportunity	Having a clear understanding: some features can be dropped or more money can be spent to recover schedule slippage	Having schedule-driven environment in order to deliver products within an allotted time

In terms of project monitoring and control, project schedule was strictly monitored and controlled while project cost was less restricted. The mindset was that the high spending could be recouped after launching the products. This also included the willingness to use excessive resources in order to save time. In the case of schedule slippage, besides the spending resources to bring the project back on track, sometimes some product features were dropped (reduce scope). We realized that this practice has to be done with caution. The team always kept in mind that the dropped features would not impact the desired features of the customers.

Proposition 5.2: *While maintaining the product quality per specification, NPD teams pursuing product-time-to-market strategy put more emphasize on project schedule than project cost.*

3. Customer Intimacy

"Customer intimacy strategy" directs a project team to gain closed relationships with the priority customers, the ones who have a major influence on the company's financial benefits. These relationships may lead to future business opportunities. With this strategy, the team pays close attention to the customer requirements and responds to them promptly. The tradeoffs among project schedule, cost, and product performance depend on what customers see as priorities, which may change over the course of the project.

To ensure that the needs and the problems of the customers were addressed, the team had open communication with the customers and involved them in the development process, e.g., the development of requirement document, product design, and test. The review of the customers' needs was the main issues in each project review. Once the prototype was done, the team let the customers test it and adopted their suggestions. In addition, the team made sure that the customer's voice was considered in a decision-making process. With "customer intimacy strategy," during project monitoring and control, the tradeoffs among project schedule, cost, and product performance depend on what customers see as priority. We found that the product performance was the priority, while the team sacrificed project schedule by delaying the software release date in order to meet or exceed the customers' expected product performance.

Proposition 5.3: *NPD teams pursuing customer intimacy strategy focus more on building a long-term relationship with the customer than short-term project schedule, cost, and performance goals.*

4. Product Cost Advantage

"Product cost focus" leads the team to develop products that are cost competitive. To do so, the project team focuses primarily on the development cost or the project budget in order to produce low-cost products. With this project strategy, the quality or the performance of the project products may not be superior but is acceptable to the customers who look for products with the best cost.

During monitoring and control, product development cost and project cost are reviewed frequently. The team has a mindset that if it is possible, cost should be saved in each step and activity. Schedule can be sacrificed if there is a conflict with the project cost. Some product features can be dropped in order to meet the cost objectives as long as the overall product characteristics meet the customers' requirements.

Proposition 5.4: *Product cost advantage strategy help NPD teams focus more on the cost element of project and product. Project schedule and product performance are the secondary focus.*

D. Project Strategies in Action

The evidence in our study showed that project strategy exists and can be seen in the forms of product superiority strategy, product time-to-market strategy, customer intimacy strategy, and product cost advantage strategy. We also found that oftentimes these strategies were not used in isolation. They were used in *a combination with other strategies with different priority levels*. In addition, while pursuing these strategies to generate project results, sometimes the project team also focused on knowledge or experiences gained by working on a project, Technical advancement. This knowledge and these experiences can be seen in the forms of, e.g., new processes or new technologies that the team can leverage for future uses.

In sum, from the cases, we found that project strategies of NPD projects are used in combination. However, within any combination, different strategies have different levels of priority. This means that a team that pursues product superiority strategy as the first priority may also pursue product time-to-market strategy as a secondary. However, we noticed that it is very important that the NPD team knows what strategies they pursue and which strategy takes precedence at any given time. Thus, we state:

Proposition 6: *A combination of project strategies with different level of priority is used when managing NPD projects.*

E. Project Strategy and Organizational Performance

Beyond the common sense that strategic project management is useful, recent research studies indicated that a good fit between business strategy and functional strategies (such as project management) can improve the organizational performance [19, 20]. Therefore, having in place strategic mindset and project strategy, and aligning the strategy with the business strategy can be of the crucial importance. The reason is in these recent research studies, because if we can learn to adapt project strategy in such way to make it aligned with business strategy, we can enhance organizational performance and success, the desire of each senior management team. Therefore, we state:

Proposition 7: *Aligning NPD project strategy with business strategy can enhance organizational performance.*

V. IMPLICATIONS

The results of this study bear several significant implications. First, to successfully manage projects, project managers and team members should have a strategic mindset. The NPD projects should be managed with *formal* project strategies. This means that a project strategy should be developed as part of a formal process. This will help deploy business level strategy to operation, *a.k.a.* project management. What we suggest are 1) NPD project should be selected based on product development strategy. 2) An appropriate project manager should be assigned to the project. 3) Project team should be formed. 4) As part of a project plan, a project strategy should be formally developed and documented. 5) Project strategy should be reviewed regularly as part of formal project management process. In other words, we suggest that the project team should explicitly develop and use project strategy and make sure that it is understood by both the team members and stakeholders. Having project strategy would help project teams react appropriately to project situations, make right trade-off decisions, develop common project spirit and culture, etc.

Secondly, our evidence showed that project strategies of product development projects exist in various forms—product superiority, product-time-to-market, customer intimacy, and product cost advantage. Which form of project strategy the project team should pursue is contingent to specific situations? However, we want to emphasize that the project strategy the team pursues should be aligned with the business strategy or objectives of the organization. Management should ensure that the strategic direction of an organization is understood by the project team so that the team can pursue the appropriate project strategy and manage the project accordingly.

Lastly, it should be understood that a project can be managed with a combination of strategies. However, it should be clearly indicated which strategy the project team should put more emphasis. In addition, these strategies should be pursued in a coordinated way with an eye to the accomplishment of the business results.

VI. CONCLUSION AND FUTURE RESEARCH

This exploratory study was conducted to investigate the concepts of project strategy in real-life contexts. The study intended to explore the existence of project strategy and to investigate the extent to which project strategy is consistent with the business strategy, *a.k.a*. whether or not there are various forms of project strategy to be aligned with business strategy. The research findings are expected to provide a better way to manage NPD projects for better business outcomes.

From this study, we found the evidence that product development projects were managed with project strategies. Even though these strategies were not explicitly defined, the project teams understood them and managed the projects with a strategic mindset. We refer to these strategies as product superiority, product-time-to-market, customer intimacy, and product cost advantage strategies. We also found that the teams pursued the combination of these strategies depending on specific situations, and the strategies they pursued were aligned with their organization's business strategy and objectives. From this finding, we therefore propose that, for better business results, NPD projects should be managed with formal project strategy. This means that project strategy should be developed, documented, and reviewed as part of formal project management process.

Even as we followed the case study research methodology, we recognized certain limitations of this research and noted that further research needs to be done. With the research in the next steps, we will extend our study to explore project strategies in different types of projects. Our proposition is that these projects are managed with different forms of project strategy from the ones that product development teams pursue. Ultimately, we would attempt to identify generic project strategy typology.

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