NordDesign 2006
August 16 – 18, 2006
Reykjavik, Iceland

On the nature of the new product strategy

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Abstract
The aim of this paper is to explore the concept of a new product strategy and its relation to portfolio management for product development. Based on a literature review this research adheres to one perception of the new product strategy proposed by literature complemented with a component adressing the risk-dimension. Next, it is suggested that the new product strategy is embedded in the product development strategy. Subsequently, it is advocated that companies try to achieve a base for realizing *integration*, *synchronization* and *strategic alignment* by means of a new product strategy. These three themes are explicated in a model, which also indicates the relation between the new product strategy and the product development process. Finally, implications for management practice are devised.

Keywords: Strategy, product development, portfolio management, technology management.

Introduction
The articulation of a new product strategy, i.e. the explicit formulation of a company's overall new product development efforts, is widely regarded as a vital pre-requisite to perform good portfolio management in order to assess, prioritize, and select projects for new products. The lack of a sound and articulated new product strategy complicates the utilization of portfolio management due to the lack of explicit goals and criteria for project selection. This increases the probability that projects are selected ad hoc lacking considerations regarding the fit with the company's overall strategic objectives. This can lead to overcommitment of the development resources and a skewed portfolio composition. Subsequently, the probability increases that the company's product portfolio will have a potential low business value.

The aim of this paper is to investigate the concept of the new product strategy phenomenon and its relation to portfolio management for product development. The research will focus upon the questions: *What is the content of a new product strategy and how is the new product strategy positioned among related strategies in the company? What do companies try to achieve by means of a new product strategy?*

Based on a comprehensive literature review this paper initially gives an overview of insights offered from literature that is assumed to be essentially related to the topic and the concept of a new product strategy is analyzed. Next, NPS content considered relevant for this research is identified, and it is suggested that the NPS is embedded in the product development strategy.

Subsequently, three significant themes *(*integration, synchronization and strategic alignment) characterizing the phenomenon NPS are identified and explicated in a model, which also indicates the relation between the NPS and the product development process. Finally, the implications for management practice are devised. A conclusion is presented in the last section. Future research will include verification by acceptance, i.e. industry professionals will be confronted with the model in order for them to assess whether it makes sense.

The research shall be considered as a contribution to the clarification of terminology and knowledge within the research area portfolio management and product development.

Insights offered from literature

The need for strategic criteria or guidelines, which outline what is inside and outside the company's product focus, is not new. Confronted with the many existing tools and models for project and portfolio selection Wind & Mahajan [1] in 1981 articulated that the existing portfolio models lacked the ability to deal with corporate directional changes. Thus the models did not support the definition of which characteristics a new product line needed in order to balance the company's product portfolio. This situation hindered the determination of the optimal portfolio mix.

Crawford & Benedetto [2] advocate for the formulation of a *product innovation charter*, which is a document that gives the conditions under which an organization will operate. They argue, "*A product innovation charter speaks to an opportunity, not the specific product or products the group is yet to create*". Crawford & Benedetto explain the innovation charter as consisting of four parts. The first part describes the background for the charter, i.e. the reason for developing the charter. Next, it explains the focus in the technology and market dimension. Next, it states the goals and objectives for the innovation effort. Finally, it outlines any "rules of the road" regarding the preferred strategic profile of the company (for example, first-to-market or product imitator).

Cooper [3] uses the term *product innovation strategy* about these goals and plans. He suggests that the product innovation strategy is a component of the business strategy for the business unit in question, which outlines the strategy for the business total new product efforts as he writes, "*it is the essential link between your product development effort and your total business strategy*".

Cooper suggests that it is useful for senior management to consider a generic business strategy when they are trying to imagine which type of product developer the company wants to be and thus ensure that this is reflected in the product innovation strategy. According to Snow [4] a company may select among four generic scenarios while developing the overall business strategy. Companies can choose to be a "prospector", characterized by being industry innovators striving to be first with new products on the market and adopting new technology. Another option is to be an "analyzer", which can be described as fast followers due to their ability to introduce new products quickly after "prospector" companies. The third possibility for companies is to be "defenders". Such companies attempts to locate and maintain a secure position in a relative stable product area. Finally, companies may choose to be "reactors", which typically only respond when forced to by strong external or market pressure. Porter [5] suggests that companies can look at strategy through a typology based upon its preferred competitive position. He specifies three generic strategies: overall cost leadership, product differentiation and focusing on a particular buyer group (niche strategy).

Cooper [3] notes that, "*if companies lack an articulated product innovation strategy it might lead to ad hoc decisions made in isolation from each other, and thus projects are selected with little regard to fit into the overall portfolio resulting in a lack of focus for the aggregate set of projects*". Cooper and Kleinschmidt [6] found that the existence of an articulated strategy is strongly linked with business performance, and they clearly identify having such a product innovation strategy as "best practice". They identified this strategy as one of the three critical success factors of new product development performance. The two other factors are the existence of a formalized product development process and adequate resources.

Cooper et al [7] argue that it is almost impossible to perform effective portfolio management without a well defined product innovation strategy. Thus the strategy is fundamental for project selection and portfolio management in order to obtain a strong new product portfolio. They suggest that the portfolio management process can be considered as an overall decision process which can be decomposed into three distinct decision processes: strategy development, portfolio review process and the product development process. The NPS overarches the decision and project selection process as illustrated in figure 1. We observe how Cooper *et al* uses the term new product strategy on the figure below, which they apparently consider as the same phenomenon in figure 1.

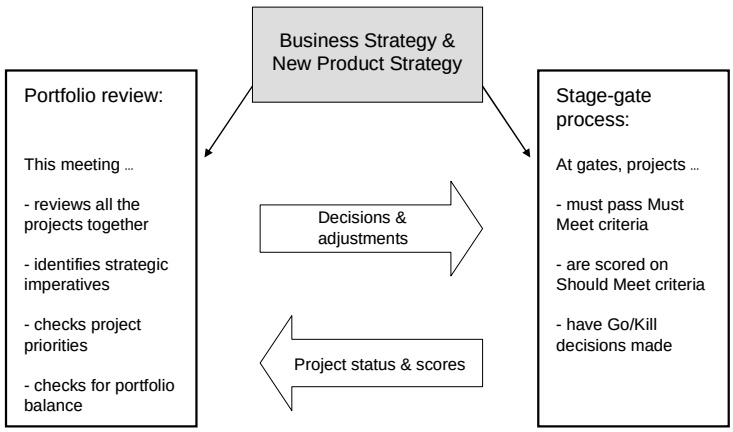

Figure 3. The portfolio management process can be considered as a three-part decision process (Cooper et al, 2001).

Portfolio reviews are periodic meetings with participation of senior management held throughout the year to consider the entire set of development projects together. The milestone meetings occur in accordance with the progress of the individual development projects from the idea stage to launch of the final product into the market. Cooper pinpoints four central components of the product innovation strategy; initially, measurable goals should be defined which explicates the role of product development within the company together with goals for the business's total product development efforts. The role of product development might be defined as its contribution to the business results, e.g. the percentage of the business sales in year 3 that will be derived from new products introduced in that five year period. The goals for the total product development effort can e.g. be defined as number of new product ideas to be considered annually.

The second component is the definition of arenas of strategic focus. This might be markets, technologies, or product categories including priorities. The third component relates to resource deployment, i.e. how the company intend to allocate the resources (resources should in this context be perceived broad, e.g. R&D funds or people, marketing resources, capital resources etc) across the arenas of strategic focus. The final component focuses on the "plan

of attack", i.e. how and when the company intends to approach each of the defined arenas. A fundamental element here is the product roadmap, which specifies the timing of each new product initiative in terms of their beginning and end, and the products launch into the market.

Dissimilar to Crawford & Benedetto [2] we observe that Cooper *et al* [7] assume that the process of developing the product innovation strategy encompasses project and portfolio selection. Otherwise it would not be possible to specify the product roadmap, which they consider as a central component of this strategy.

Baker & Hart [8] also seem to change between the terms new product strategy and product innovation strategy for the same phenomenon. They advocate that the strategy "*essentially comprises a view of where a new programme of development sits in relation to the technologies that are employed and to the markets which these technologies will serve*". They argue that such a strategy should specify five central dimensions: 1) the market potential, 2) the source of competitive advantages the development seeks to achieve in those markets, 3) the balance between the former two dimensions, 4) the differential advantage of the development, and 5) the level of risk acceptance.

By introducing the concept of the development task Andreasen *et al* [9] pursue a quite different approach to the development of goals and plans for a company's overall product development activities. They describe the development task as a functional description of the tasks executed by the cross-functional development function and the objectives it realizes. The development task is comprised of the totality of planning and execution tasks related to the creation and maintenance of products and the utilization of technology, which is carried out by the cross functional development function. They write, "*The formulation of new tasks should be based on the company's characteristics and strategic foundation*". Andreasen *et al* suggests the use of descriptors to support management in the definition of the development task. The descriptors are structured into five main areas, 1) the company's surroundings, 2) the company's superior policy and decisions, 3) requirements from other functional areas within the company, 4) internal circumstances in the development function, and finally, 5) customer needs and products.

We note how Andreasen *et al* advocate for the development of a holistic strategy aiming at guiding the company's total product development efforts - and hence does not solely focus on the new product portfolio. They denominate the strategy with the term product development strategy.

Khurana & Rosenthal [10] focus on the early phases of product development, when they recognize the importance of strategy as a basis for effective project selection. They pinpoint that it is a prerequisite that strategic foundation elements are in place in their proposed systems view of the front end process. Archer & Ghasemzadeh [11] do also not use the term NPS in their proposal for a framework for project portfolio selection. However, they also acknowledge the importance of strategy, when they propose that the process of selection should be done in three phases: strategic considerations, individual project evaluation and portfolio selection. The purpose of the first phase is to determine strategic focus and overall budget allocation for the portfolio. As the first of their eleven propositions for effective portfolio selection they write, "*Strategic decisions concerning portfolio focus and overall budget constraints should be made in a broader context that takes into account both external and internal business factors, before the project portfolio is selected*".

In order to build a broad perspective of strategic direction and focus, and specific initiative for competitive advantage they suggest a *pre-process activity* aimed at deriving high level and strategic guidelines should precede portfolio selection process. Archer & Ghasemzadeh suggest that this determination of strategic focus can be separated from the actual portfolio selection, because it very much involves the firm's strategic direction and thus should be carried out at a higher managerial level. Strategic guidelines developed at this point in the process will only occasionally need adjustments, whereas the portfolio selection process itself recurs at regular planning intervals.

We observe how Archer & Ghasemzadeh assume the deriving of guidelines as separated from the portfolio selection process. Further, we note that strategy development only need to be reviewed as required, and not every time the portfolio is reconsidered.

Patterson [12] distinguishes between the portfolio management process and a portfolio planning process in his framework proposition. The latter is a strategic process owned and executed by the business leadership team in the company. He writes, "The *objective of this process is to create a strategic plan for new products and technologies that is responsive to the firms overall business strategy"*. Patterson emphasizes the integration of market and technological perspectives as important elements in the portfolio planning process when he notes "*these two functions in the company should come together to share and integrate what they have learned*". The key outputs from this activity include 1) a new product roadmap, 2) a roadmap for future technological efforts, and 3) high quality decisions on whether or not to add potential new product or technology efforts to the current portfolio.

All members of the company's leadership team should take part in gathering and processing of information required for the portfolio planning process because the integration of multiple perspectives leads to stronger product and technology strategies according to Patterson.

Unlike Archer & Ghasemzadeh we observe how Patterson assume the deriving of guidelines as clearly integrated with the process of selection of a portfolio according to the output of the process. Patterson's assumptions are also consistent with the findings of Wheelwright & Clark [13] in their proposal for an eight-step procedure for developing an aggregate project plan.

Phaal *et al* [14] adhere to the term *technology strategy*, and congruent with the findings of Andreasen *et al* they emphasize the importance of considering the totality of the development efforts. They perceive the technology strategy as concerning three functional areas in the company, namely R&D, engineering and manufacturing. Phaal *et al* write, "*A key premise is that a technology strategy should not be developed independent from the business strategy. Instead technology resources should be considered an integral part of strategic business planning*".

We note how the concepts of technology strategy and business planning seem to converge into one common strategic planning process according to Phaal *et al*.

Findings

From the excursion into the literature we observe how different authors use different terminology about the research object. Hence we see terms like product innovation charter, new product strategy, product development strategy, technology strategy, product innovation strategy, etc. It seems that a NPS is company specific, based on the situational context with

regard to company internal and external perspectives. In general, it seems that a NPS can be derived starting from a number of central components or descriptors. The common denominator, however, is the purpose of providing goals and plans for the company's product development efforts. In its most comprehensive form it seems that the guidelines cover not only the specific new product initiatives, but also other activities related to the total development task.

The components of the New Product Strategy

This research, however, adheres to the perception of NPS proposed by Cooper [7]. This is due to its strong articulation and concretization of the embedded components in the strategy, which is assumed to facilitate its formulation in industrial practice. Furthermore, this research suggests that it might be beneficial to complement the NPS components suggested by Cooper with a component addressing the risk-dimension as suggested by Baker & Hart [8]. The concept of risk is closely related to the concept of financial reward, and thus it seems reasonable to consider the level of risk acceptance explicitly before allocating resources to the various categories of new product initiatives. Thus the NPS is perceived as consisting of the following six components:

- The role of product development
  What role does product development play in the company's overall business creation?

- The goals for the new product efforts
  What are the goals for the new product efforts?

- Arenas of focus
  Which arenas should the new product efforts be aimed at?

- Risk level
  What is the level of risk acceptance?

- Resource allocation
  How should resources be utilized across the arenas?

- Approach to arenas
  How should each arena be approached (what, where and when, explicated by means of a roadmap)?

Positioning the New Product Strategy

The studied literature indicates that the NPS is perceived as closely related to other types of strategies in the company. However, there seems to be confusion between the different types of strategies and their relations are only partly explicated. In order to contribute to clarity to the terminology within the area this research suggests that the NPS can be considered as an inherent part of the product development strategy as shown on figure 2. The ***corporate strategy*** is considered as the top level strategy, and it explicates the overall policy of the company [15]. This includes the ethics, values and beliefs which the company is founded upon, and it encompasses considerations regarding the company's role in the society and its corporate responsibilities. The ***business unit strategy*** is a part of the corporate strategy, and it is merely focused on how the company are pursuing business creation within a particular market or product area [15].

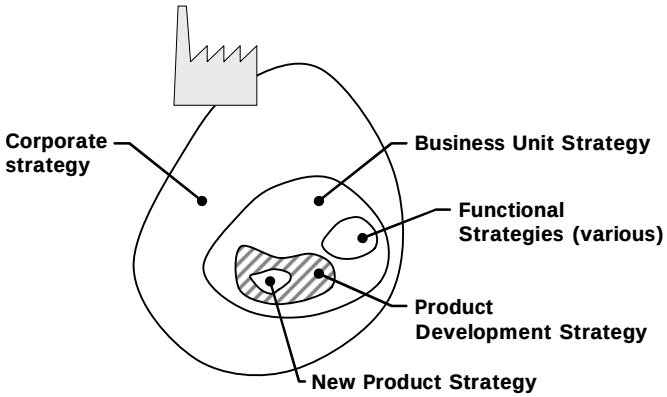

Figure 4. The New Product Strategy can be considered as embedded in the product development strategy.

Besides the product development strategy it consists of a number of other functional strategies such as marketing strategy, production strategy, distribution strategy, human resource strategy etc. The *product development strategy* is perceived as a strategy supporting the company's total product development efforts in accordance with Andreasen *et al* [9]. Hence it includes considerations regarding many aspects of product development such as competence development, the handling of customer requests and the identification of which standards and norms the development effort should be based on. A part of the product development strategy addresses aspects closely related to the new product portfolio, and these aspects are in this research assumed to be captured in the *new product strategy*.

A base for realizing integration, synchronization and strategic alignment

In general, there seems to be conformity in the literature regarding the importance of NPS, which is considered as a crucial prerequisite and a "best practice" element for portfolio management. The overall goal for companies is obviously to support the composition of a strong new product portfolio. At a lower level of abstraction this research assumes three recurring themes as particular significant, which are attempted illustrated on figure 3. Thus it seems that the companies are trying to achieve:

- ***Integration.*** Integration appear to be a central theme in several dimensions characterizing the NPS, because several authors stress the importance of obtaining multiple perspectives in decision-making during the development of the NPS. In this research it is assumed that the integration theme can be decomposed into at least three dimensions. The first dimension concerns the *overall* integration of company external perspectives (i.e. regarding market, customer, and competition) with the company internal perspective (i.e. regarding resources and capabilities). Horizontal and vertical integration are the second and third dimensions. They concern *internal* integration in the company, which might be considered as a vehicle for realizing the overall integration. *Horizontal* integration refers to the integration of the various functions in the company, i.e. R&D, marketing, production, service etc. *Vertical* integration refers to the integration across hierarchical, organizational levels (i.e. from top management to first line managers).

- ***Synchronization.*** Synchronization seems to be another key matter characterizing the NPS, because this addresses the dynamic nature of product development. The evident issue here -manifested in the product roadmap- is to synchronize the company's new product efforts with the "windows of opportunity" on the market, which typically span different time horizons. This implies conscious choices regarding rhythm and timing of resource

allocation in order to ensure continuity in the workload across the various functions in the company.

- ***Strategic alignment.*** Strategic alignment is basically about ensuring focus and consistency in the PD activities both horizontally and vertically across the organisation in accordance with the company's goals and objectives. This is crucial in order to ensure that the product development resources are allocated to the "right" activities, i.e. activities which contribute to the realization of the stated intentions whilst resources and competencies are exploited

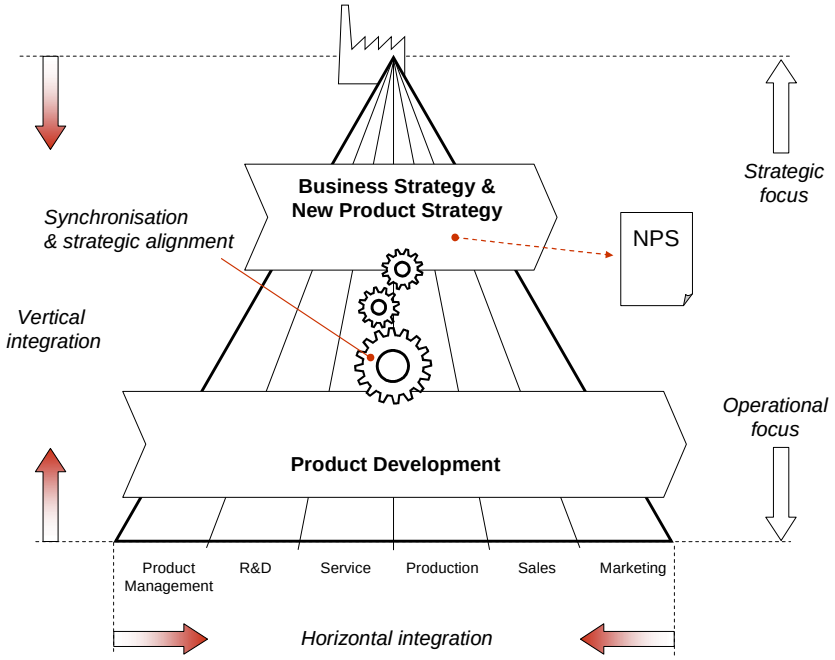

Figure 5. The New Product Strategy provides a base for realizing integration, synchronization and strategic alignment for the new product efforts.

The positioning of the NPS and the explication of what companies are trying to achieve by means of the NPS (*integration, synchronization and strategic alignment*) captured in the model above shall be considered as a contribution to the clarification of terminology and knowledge within the research area portfolio management and product development. Future research will include verification by acceptance, i.e. industry professionals will be confronted with the findings in order for them to assess whether it makes sense.

Managerial implications

The findings reported in this paper have at least three important implications for management professionals in the industry.

First, the findings indicate that the NPS should be formulated in a pattern of horizontal and vertical organizational integration. Thus it is not sufficient with participation of managers from the various functional departments. Specialists and key personnel from various organizational levels (i.e. product managers, technology specialists, sales people) who possess insights achieved through operational work should also contribute in order to support *vertical* integration in the company. The idea is to avoid "hands-off" decision making, i.e. decision making based on assumptions and beliefs which are not rooted in a deep understanding of the business and the conditions which it operates on. This is advocated by Larsson [16] to be

imperative in order to formulate criteria necessary for project and portfolio selection. Furthermore, this involvement of personnel from various functional departments and organizational levels supports the reduction of functional domination, which Perks & Greenland [17] found to be one critical dimension during decision making at project and portfolio level.

Next, the findings indicate that the formulation of the NPS should be approached as a process, i.e. a series of meetings instead as one isolated meeting. Otherwise it might be difficult to realize synchronization and strategic alignment in the NPS. The time span implied by the process enables further information search between the meetings. This involves checking for strategic alignment to make certain that resources and competencies are exploited. Simultaneously it enables coordination with regard to rhythm and timing of resource allocation in order to ensure continuity in the workload across the various functional departments whilst business opportunities are exploited. In general the value of such a process approach to decision making is underpinned by research results [18] which demonstrate that even sparse indications of a process significantly increase the goodness of the resulting decisions.

Finally, the inclusion of a roadmap in the NPS point to that the formulation of the new product strategy involves selection of specific new product initiatives, i.e. portfolio planning. It is assumed that it might be easier for companies to formulate the strategy in the context of concrete portfolio elements (i.e. ideas and projects) than formulating the new product strategy detached from these elements. During this work it is important to avoid being delimitated by what the company currently is doing in terms of markets, product and technologies, because that might impede “thinking out of the box”, which might be needed in order to identify and explore radical new business opportunities.

Conclusion

The research work documented in this paper has explored the concept of the new product strategy. Based on an exhaustive literature study this research adheres to the perception of NPS proposed by Cooper [7]. This is due to its strong articulation and concretization of the embedded components in the strategy, which is assumed to facilitate its formulation in industrial practice. Furthermore, it is suggested to complement this perception with a component addressing the risk-dimension. The purpose is to explicate considerations regarding the level of risk acceptance before allocating resources to the various categories of new product initiatives. Next, the position of NPS among other strategies in the company has been indicated, and it is suggested that the NPS is embedded in the product development strategy. Subsequently, three significant themes *(*integration, synchronization and strategic alignment) characterizing the phenomenon NPS have been identified and explicated in a model, which also indicates the relation between the NPS and the product development process. Finally, implications for management practice have been devised.

Acknowledgements

The author would like to thank Niels Henrik Mortensen, Mogens Myrup Andreasen, and Tim McAloone, Technical University of Denmark, for providing valuable comments to the work.

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