Stellingen

behorende bij het proefschrift

Launch strategies and new product performance:
An empirical international study

1. Om de kans op succes te vergroten dienen bedrijven bij de introductie van nieuwe producten hun tactische introductiebeslissingen af te stemmen op de strategische introductiebeslissingen die reeds eerder in het product-ontwikkelingsproces zijn genomen.
   Dit proefschrift

2. Het succes van een nieuw product bestaat uit drie dimensies: technisch succes, marktsucces en financieel succes. Dit impliceert dat er niet één algemene en bevredigende indicator bestaat maar dat meer indicatoren moeten worden gemeten om een volledig beeld van het succes van een nieuw product te krijgen.
   Dit proefschrift

3. De relaties tussen introductiebeslissingen en succes verschillen per land. Er is dus niet één introductiestrategie die internationaal tot succes leidt.
   Dit proefschrift

4. Een goed product is een noodzakelijke maar niet voldoende voorwaarde voor succes.
   Mede dit proefschrift

5. Om het succes van nieuwe producten beter te kunnen verklaren moet men in de toekomst naast het productontwikkelingsproces en de introductiestrategie ook de periode tussen de introductie en het meten van succes in ogenschouw nemen.
   *Mede dit proefschrift*

6. Winkeliers worden in toenemende mate tureluurs van de vele nieuwe producten (zie o.a. *Het Parool*, 21/12/96). Dit betekent eerder dat fabrikanten tevens rekening moeten houden met de wensen van winkeliers dan dat zij hun vernieuwingsdrang moeten temperen.

7. Het feit dat zowel in Londen als in Amsterdam radio/tv zaken gesitueerd zijn tussen snackbars en erotheken suggereert dat de kwaliteit van de vestigingsplaats van winkeliers voor een bepaalde productcategorie een goede indicator vormt voor de volwassenheid van deze productcategorie.

8. Dat elk nieuw boek van Herman Brusselmans een bestseller wordt, ontkracht Gerard Reve's stelling dat al het nieuwe en originele slecht en waardeloos is.

   Naar: Gerard Reve (1996). *Het boek van violet en dood* (2e druk, p.22).

9. Het is merkwaardig te constateren dat bij de registratie van doodsoorzaken door het CBS zelden ouderdom als oorzaak wordt opgevoerd.

10. De resultaten van Henk Angenent en Erik Hulzebosch in het afgelopen jaar tonen aan dat verschillende dimensies van succes te onderscheiden zijn.

Erik Jan Hultink, april 1997

LAUNCH STRATEGIES AND NEW PRODUCT PERFORMANCE

An empirical international study
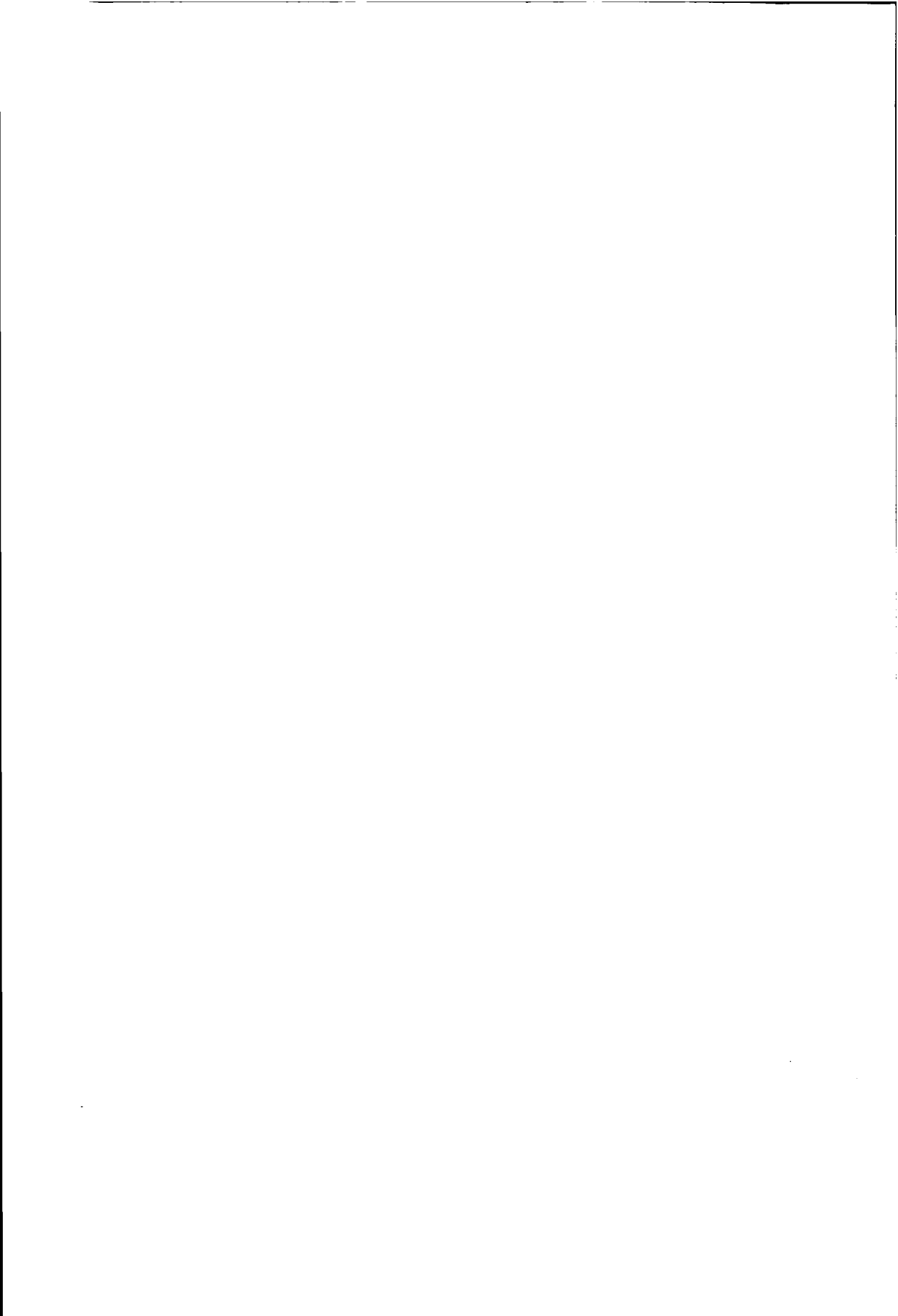
LAUNCH STRATEGIES AND NEW PRODUCT PERFORMANCE

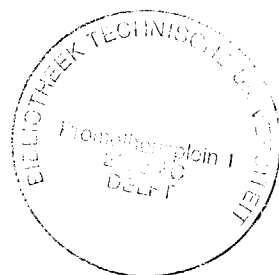# An empirical international study

PROEFSCHRIFT

Ter verkrijging van de graad van doctor
aan de Technische Universiteit Delft,
op gezag van de Rector Magnificus Prof. dr. ir. J. Blaauwendraad,
in het openbaar te verdedigen ten overstaan van een commissie,
door het College van Dekanen aangewezen,
op maandag 28 april 1997 te 16.00 uur

door

Hendrik Jan HULTINK

doctorandus in de economische wetenschappen,
geboren te Hoogkerk.

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ACKNOWLEDGMENTS

1. INTRODUCTION

It is widely acknowledged that there is nothing more difficult than to initiate and implement a new order of things. The development and launch of a new product are no exception. For many companies, continuously launching successful new products is a happy memory of times past. Every firm has introduced new products that did not meet the company's financial or non-financial objectives at least once.

Therefore, it is not surprising that researchers, managers, and consultants alike have shown an increasing interest in the determinants of new product development (NPD) performance. The present project aims to contribute to this discussion by investigating the impact of the launch strategy on new product performance.

Chapter One defines a launch strategy and deals with the aim and with the academic and managerial relevance of the project. A special section is devoted to the relevance of the present research project for NPD. The chapter concludes with an overview of the remainder of the book.

1.1 Defining a launch strategy

A launch strategy describes those marketing decisions that are necessary to present a new product to its target market and begin to generate income from sales of the new product (Choffray and Lilien, 1984, 1986; Green and Ryans, 1990; Yoon and Lilien, 1985). These marketing decisions for new products have been referred to under the collective terms of market entry, launch strategy, product launch, commercialization and introduction (Hultink and Hart, 1996).

Basic marketing and product development texts generally provide a list of marketing decisions that belong to a launch strategy. For example, Calantone and Montoya-Weiss (1993) describe a launch strategy in terms similar to those of a marketing plan: identify target markets, establish marketing mix roles, forecast financial outcomes and control the project. Moore and Pessemier (1993) mention that the principal components of a launch strategy are creating value (through favorable actions about design, price and message) and delivering value (through spending for favorable awareness and availability).

Synthesizing across the available literature suggests that a launch strategy can best be described by a number of strategic launch decisions and several tactical marketing mix decisions (Biggadike, 1979; Hultink et al., 1997; Johne and Snelson, 1988). The most obvious launch decisions take place after the conceptual and physical development of a new product is complete.

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These are the tactical launch decisions generally involving marketing mix adjustments (i.e., product, distribution, pricing and promotion). These tactical launch decisions govern the *how* of the launch.

Part of the launch decisions, however, occur prior to making the tactical launch decisions, and prior even to beginning development (Biggadike, 1979; Crawford, 1984). These are the strategic launch decisions that, once made, are difficult or expensive to change later during development. The strategic launch decisions involve the objectives and timing of the new product's launch, the selection of target markets and the intended newness of the new product (Buijs and Valkenburg, 1996; Kotler, 1994; Roozenburg and Eekels, 1995; Urban and Hauser, 1993). These decisions govern the *why to launch* (objectives), *when to launch* (timing), *where to launch* (target market selection) and *what to launch* (product newness).

Including both strategic and tactical launch decisions in research on product launch strategies is necessary as both sets of variables effect the nature of the overall launch (Biggadike, 1979). For example, Hisrich and Peters (1991) and Robinson and Fornell (1985) argue that the strategic launch decisions made at an early stage of the NPD process impact which of the tactical launch decisions are most likely to maximize profitability over a product's life cycle. The strategic launch decisions set the context for the tactical launch decisions and serve as bench-marks against which evaluations about the direction of the development as the process unwinds (Hultink and Hart, 1996). Therefore, the present research project defines a launch strategy as consisting of those strategic and tactical marketing decisions that a firm makes to present a new product to its target market (adapted from Green and Ryans, 1990).

1.2 The aim

Managers make launch decisions for each new product developed. Regardless of the fact whether these decisions are made explicitly or implicitly, questions concerning *what, when, where, why and how to launch should* be resolved. This task is not a trivial matter. Of all the steps in the NPD process, the product launch requires the largest commitment in time, money, and managerial resources (Urban and Hauser, 1993). For example, while Unilever spent $300,000 on the development of the new detergent *OMO Power*, the marketing expenses during the new product launch were over $500,000 (Riezebos and Waarts, 1994). Cooper and Kleinschmidt (1988) found that 54% of all NPD expenditures were spent on the market launch versus 39% on product development and 7% on predevelopment activities. Finally, Kotler (1994) mentions that in the launch of new food products, marketing expenditures typically represent 57% of sales during the first year.

While there is an extensive literature that deals with the subject of NPD, little reference is made to the launch strategy (Baker and Hart, 1993; Green, Barclay and Ryans, 1995; Johne and Snelson, 1988). This finding is surprising because the launch strategy is an important determinant of new product performance (Cooper, 1979; Cooper and Kleinschmidt, 1986; Frambach, 1995; Link, 1987). Many examples in the business press have also illustrated that the development of a technologically advanced new product is no guarantee for commercial success. For example, the failures of PTT Telecom's Kermit (a mobile telephone unit), Kodak's Photo-CD and Philips' CD-I have been attributed to unsuccessful launch strategies (*Business Week*, February 3, 1995; *De Volkskrant*, January 14, 1994; *De Volkskrant*, August 7, 1996).

Until now only a few empirical studies have investigated the relationships between launch decisions and new product performance. Which launch strategy to use for new products to enhance the probability of success is still an unsolved question. In addition to that, a majority of the studies have focused on industrial products and have been conducted in Canada, France or in the U.S.A.. It is a question whether we can generalize those findings to other countries and to other types of products. It is the aim of the present research project to fill a part of this gap by investigating industrial as well as consumer product launches in The Netherlands, the U.K. and the U.S.A..

1.3   Managerial relevance

Successful new products are vital for companies' commercial health and survival capabilities (Cooper, 1979; Cooper and Kleinschmidt, 1986; Dougherty, 1990; Maidique and Zirger, 1984; Van de Ven, 1986). Several authors have shown that new products account for increasing shares of total current companies' sales and profits (Booz, Allen and Hamilton, 1982; Duerr, 1986; Dwyer and Mellor, 1991; Hultink and Robben, 1995a; Vanden Abeele and Christiaens, 1986; Wind, Mahajan and Bayless, 1990). For example, Hultink and Robben (1995a) reported that new products introduced in the last five years generated 41% of company's sales and 39% of company's profits. Duerr (1986) found that 35% of current revenue was derived from products that were not on the market ten years ago. These figures indicate that the importance of new products for companies is increasing.

Over the past twenty years, the *number* of new product launches has also increased (Edgett, Shipley and Forbes, 1992). This development does not only bring an increasing imperative to renew products continuously, but also increasing opportunities for failure. New product failure rates reported in the literature vary widely, mainly because they differ in their definitions of failure (Crawford, 1977). In two reviews of the relevant literature on this topic,

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Crawford (1979, 1987) concludes that the failure rate for new products is in the area of 30% to 40%, depending on the type of new product. Consumer products fail more often than industrial products (35% versus 25%). Page (1993) found that the average success rate for new commercialized products was 58% (42% failures), at a time when the average number of introductions has increased by 140% since the period covered by the most recent Booz, Allen and Hamilton study (1976-1981).

These findings show that there is room for improvement in NPD efficiency and effectiveness. For example, Booz, Allen and Hamilton (1968) found that of all new product expenditures, almost three-fourths go to unsuccessful products. Cooper and Kleinschmidt (1988) found that companies spend more time on failures than on successes. In short, the competitive pressure to launch new products has resulted in increased new product activity without a corresponding increase in new product success rates. These findings are discouraging from a macroeconomic as well as from an individual business' perspective.

The inherent risk in developing and launching new products has generated a solid and expanding literature on what factors determine new product performance. Syntheses of this literature into success and failure determinants have shown that several issues recur in the determinants of new product performance (Craig and Hart, 1992; Hurter and Rubinstein, 1978; Johne and Snelson, 1988; Lilien and Yoon, 1989; Montoya-Weiss and Calantone, 1994). One of those common issues is the impact of the launch strategy on new product performance.

Although many authors agree that the launch strategy is crucial, less well understood is how specific launch decisions are related to new product performance. Managers would benefit from a more thorough understanding of these relationships. In choosing a launch strategy, managers formulate expectations about the contribution of the various launch decisions to the future success of the new product. Successful (launch) decisions will reflect current theory on one hand and intuition and experience on the other (Blattberg and Hoch, 1990). Until now, current theory and research have not fully investigated how to launch a new product successfully. The present research project aims to contribute to this body of knowledge.

1.4 Academic relevance

Several empirical studies have been conducted in the last three decades to discover the determinants or correlates of NPD performance (see, for instance, Cooper, 1979; Cooper and Kleinschmidt, 1987a; Link, 1987; Maidique and Zirger, 1984; Rothwell et al., 1974). This research can be divided into a generalist and a specialist approach (Craig and Hart, 1992). The generalist approach investigates and measures different sets of variables with respect to their

impact on new product projects and programs. The specialist studies focus on one particular area of NPD, for example, the integration of the different functions involved in NPD (Griffin, 1989; Moenaert and Souder, 1990; Olson, Walker and Ruekert, 1995), or the launch strategy for a new product (Choffray and Lilien, 1984; Green and Ryans, 1990).

The specialist studies follow the generalist studies in that they select one or two related issues that have been identified as critical to performance in the generalist studies, and investigates them in depth (Craig and Hart, 1992). The present research project will take a specialist approach because such an approach allows for an in-depth scrutiny of *how* launch decisions impact new product performance. Previous studies have shown that, for example, appropriate targeting, pricing, and timing decisions impact new product performance. In the present research project, it is the aim to discover what appropriate targeting, pricing, and timing decisions are. The consequence of this choice is that some determinants of new product performance may not be included in the study.

Although many advances have been made in the field of NPD, a recent review and meta-analysis offers several suggestions concerning the future conduct of research on the determinants of new product performance (Montoya-Weiss and Calantone, 1994). The present research project will deal with the recommendations that are discussed below.

For many variables measurement issues should be more thoroughly addressed
One of the major problems in investigating the determinants of new product success and failure is the measurement of new product performance. Little consensus exists among the major studies and among managers on this issue. Hart (1993) notes that much of the literature has skillfully sidestepped what the essence of new product performance is. To date, it is still a question which dimensions of performance one should include and how to measure these dimensions. This issue is a major problem because the way in which new product performance is defined and operationalized influences the findings which describe the factors contributing to new product performance (Hart, 1993; Hultink and Robben, 1995a). The present research study will contribute to this discussion by explicitly considering the multidimensionality of new product performance, the effect of time perspective of new product performance, and the role of product and firm characteristics in the measurement of new product performance.

Future studies should pay more attention to the type of innovations included
Kleinschmidt and Cooper (1991) found that different types of innovations were associated with distinct performance determinants and levels of performance. Because a minority of the published articles in the new product field report the type of innovation studied, the validity of the results regarding the significance of the determinants of new product performance is question-

able (Montoya-Weiss and Calantone, 1994). The present study used the categorization of new products provided by Booz, Allen and Hamilton (1982). In this way, launch strategies and levels of performance can be compared for the different types of new products.

The relationships among the independent variables should be examined more completely
A majority of the empirical studies in the past investigated NPD performance determinants one by one by contrasting successful with unsuccessful products (i.e., a dyadic approach). While these tests of difference remain relevant, there is a need to move beyond t-tests to examine more completely the relationships among the independent variables and between sets of related independent variables and new product performance (Montoya-Weiss and Calantone, 1994). The present study will do both. Differences in launch decisions between successful and unsuccessful products will be investigated with a dyadic approach in Chapter Five. Chapter Six investigates associations among the launch decisions and the performance implications of these sets of related launch decisions.

Research should also be replicated for consumer products
Most empirical studies published so far have been conducted in industrial organizations. Differences or similarities in the determinants of new product performance for manufacturers of consumer products can only be understood if research is replicated in this area (Montoya-Weiss and Calantone, 1994). The present study has investigated industrial as well as consumer product launches in Chapter Seven.

There is a need for replication of research in Europe
Most empirical studies on the determinants of new product performance have been conducted in Canada and in the U.S.A.. Only a few studies have collected data in European firms. For instance, Bronnenberg and Van Engelen (1988) tested Cooper's (1992) New Prod system in The Netherlands and Vanden Abeele and Christiaens (1986) used the same system among Belgian high-tech firms. Both projects are generalist studies. Specialist studies on launch strategies are rare and almost nonexistent in Europe. The only published European studies so far are the ones by Choffray and Lilien (1984, 1986) which focus on industrial new product launches. In the present study data on new product launches have been collected in The Netherlands, the U.K. and in the U.S.A..

There is a need for studies that examine intercountry differences
Only a few empirical studies so far have studied intercountry differences (see, for instance, Clark and Fujimoto, 1991; Edgett, Shipley and Forbes, 1992; Gupta, Brockhoff and Weisenfeld, 1992).

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Therefore, it is not clear whether global principles or differences in determinants of new product performance among countries exist (Montoya-Weiss and Calantone, 1994). Specialist studies on the effectiveness of launch strategies have not addressed intercountry differences at all. The present study will take a first step in Chapter Eight by investigating differences in launch strategies among The Netherlands, the U.K. and the U.S.A..

1.5 Directives for new product development

Product developers develop new products for or within companies to achieve the companies' financial and nonfinancial objectives. The development of a new product and the development of a launch strategy are related dependent processes. While some authors argue that the market launch is just the last essential step in the NPD process, many others have proposed that the development of a new product and the development of a launch strategy are parallel, iterative and dependent processes (Calantone and Montoya-Weiss, 1993; Crawford, 1994; Johne and Snelson, 1988; Roozenburg and Eekels, 1995). For example, the final concept of a new product will probably reduce the number of possible target markets because only a limited number of customer segments will prefer the attributes of the new product. In addition, the total costs for building a working prototype will indicate in what price range the new product will be available. This interdependency implies that the planning of the market launch is an ongoing activity that should occur both formally and informally throughout much of the NPD process (Calantone and Montoya-Weiss, 1993). Therefore, all members of the NPD team, including product developers, have to take the launch strategy into account when completing their tasks.

Insight in the relationships among launch decisions and new product performance will be beneficial for product developers for at least two reasons. In the first place, a product developer aims at developing a *commercially successful* product and not just a good-looking product integrating path-breaking technologies. In the second place, insight in what kind of launch decisions make a new product a success may impact what kind of decisions product developers should make. For example, if the current research project would conclude that a penetration pricing strategy is optimal for new consumer products, the relevance of cost control in the *design specification plan* (Roozenburg and Eekels, 1995) of product developers in this area increases.

1.6 An overview of the remainder of the book

Chapter Two presents an extensive literature review that addresses theoretical and empirical contributions to the understanding of the effectiveness of launch strategies. Several shortcomings have been identified in the literature. First, much of the literature has not fully considered the multidimensionality of new product performance. For example, the new product diffusion literature seems to be interested only in the rate and extent of diffusion but disregards financial or technical performance measures. In addition, diffusion research mainly focuses on the product category level. The present research project focuses on the impact of launch strategies on new product performance at the individual new product level.

Mathematical models on the effectiveness of the marketing mix like BRANDAID (Little, 1975) have primarily dealt with existing products and not with new products. Models like TRACKER (Blattberg and Golanty, 1978), NEWS (Pringle, Wilson and Brody, 1982), and ASSESSOR (Silk and Urban, 1978; Urban and Katz, 1983) do deal with new products but are all designed to forecast the sales levels and the effectiveness of launch strategies for Fast Moving Consumer Goods and not for other types of new products.

Comparing the previous approaches used for investigating launch strategies shows that post-hoc correlational methods are most useful for the present research project. However, in the past these methods have only partially considered the impact of launch strategies on new product performance. For example, previous studies included only a limited number of launch decisions, they did not acknowledge how launch decisions are structured in time (i.e., the strategic/tactical dichotomy) or they did not address relationships among the launch decisions. The present research project addresses these problems.

Chapter Three presents the conceptual model and addresses the interrelationships among the building blocks in the model. In addition, the selection and operationalization of the launch variables will be dealt with. A launch strategy will be operationalized as consisting of strategic launch decisions made early in the NPD process and tactical launch decisions that are implemented in a later stage of the NPD process. It will be hypothesized that these two groups of decisions and the alignment achieved across both groups of decisions impact the performance of the new product in the marketplace.

Chapter Four focuses on the definition and operationalization of the dependent variable in the study. Here, the multidimensional concept of new product performance will be dealt with. First, the literature on measuring new product performance will be reviewed. Subsequently, the design and results of an empirical study on the perceived importance of several previously identified performance measures by managers in the Dutch industry will be presented. The results of this study indicate that company and product characteristics do not impact the importance of new

product performance measures. This finding shows that heterogeneity of samples need not bias the results.

Chapter Five starts by discussing the sample of respondents and new products used in the remaining chapters. Each potential respondent was asked to provide data on a successful and on an unsuccessful product. The chapter then proceeds by analyzing through univariate analyses whether differences in strategic and tactical launch decisions exist between the sample of successful and the sample of unsuccessful new products. The findings highlight the importance of, for example, offering a broad assortment of innovative new products at a well-targeted niche.

Chapter Six analyzes through multivariate analyses the associations among the strategic and tactical launch decisions for the full sample of consumer and industrial products launched in the three countries (i.e., The Netherlands, the U.K. and the U.S.A.). Canonical correlation analysis shows that several strategic launch decisions are associated with several tactical launch decisions. Based on these associations, three generic launch strategies for new products are derived that differ in terms of performance. In addition, the results show that the use of these three generic launch strategies differs between consumer and industrial products and among the three countries of introduction. Given these differences, the analyses were repeated for the two product type samples (consumer and industrial) and for the three country samples separately. Differences in launch strategies between consumer and industrial products are discussed in Chapter Seven while differences in launch strategies among countries are discussed in Chapter Eight.

Chapter Nine summarizes the most important findings of this research. In addition, it addresses the limitations of this study and identifies directions for future research. Finally, the academic and managerial implications and directives for NPD will be discussed.

2. PREVIOUS APPROACHES AND FINDINGS

Several approaches are available for investigating the determinants of new product performance. Most approaches assume that an interplay of customer, company, competitor and launch strategy related factors affect the performance of a new product in the marketplace. In addition, the different approaches have in common that they are generally designed to estimate the level of new product performance as well as to diagnose the impact of several factors (including the launch strategy) on the new product's performance estimates (Assmus, 1984; Mahajan and Wind, 1988).

Developing an appropriate launch strategy and predicting the level of new product performance are important NPD issues. Developing an appropriate launch strategy is important because the launch strategy is a major determinant of new product performance (Cooper, 1979; Cooper and Kleinschmidt, 1986; Frambach, 1995; Link, 1987). Predicting the performance of a new product is an essential aspect of new product management because investments in production facilities, hiring new sales personnel, preannouncing the new product to the marketplace, and many other management tasks, all depend on the question whether the expected performance of a new product exceeds company's guidelines.

Therefore, several methods have been developed recently for investigating the correlates and determinants of new product performance in terms of the strengths and directions of these effects. These newer approaches differ from earlier ones in that they rely more on objective data for investigating the performance of a new product. This chapter will review these approaches.

2.1 Approaches for investigating the determinants of NPD performance

The present chapter will review five research approaches for investigating the correlates and determinants of new product performance. These approaches vary with respect to many criteria (Assmus, 1975; Chambers, Mullick and Smith, 1971; Crawford, 1994; Mahajan and Wind, 1988; Urban and Hauser, 1993; Wind, 1982). These criteria are, for example, the specific objectives of the approach, the type of data that the approach requires, the type of products for which the approach is developed and the extent to which strategic and tactical launch decisions are included. To establish which of the approaches serves the objectives of the present research project best, it is first necessary to summarize the goals and intended contributions of the present project.

The goals of the present research project are to investigate how new product launch decisions come about and to which results these decisions lead. More specifically, it is the aim of the present project to investigate which strategic and tactical launch decisions firms make,

how these launch decisions are combined into a launch strategy and what the impact of these launch strategies is on several measures of new product performance. In addition, the present project aims to investigate differences in launch decisions between different product types (e.g., completely new consumer products versus reformulated industrial products) and among different countries of introduction. Therefore, it is necessary to choose a research approach that:

1. Allows for analyzing a number of strategic and tactical launch decisions;
2. Allows for investigating the interrelationships among the launch decisions;
3. Is suitable for consumer and industrial new products;
4. Is suitable for products that differ in terms of newness;
5. Can be used in several countries; and
6. Takes a multidimensional view on new product performance.

Before discussing the research approaches in detail, it is necessary to establish an appreciation of the essence of each approach. Therefore, the different approaches will be introduced briefly. Subsequently, the differences among the approaches and their usefulness for the present project are discussed. To facilitate the decision of the most appropriate approach, the five research approaches will be discussed in more detail. Finally, this analysis leads to the choice of the research approach that best fits the present research project.

The different approaches
The five research approaches that are covered in this review are concept testing and conjoint analysis, product testing, pretest market tests and test market models, early sales models, and post-hoc correlational methods. Table 2.1 summarizes relevant characteristics of the five research approaches. In this table, concept testing, conjoint analysis and product testing were grouped together because the characteristics of these approaches were identical.

Concept testing and conjoint analysis are procedures designed to assess customers' reactions to a new product concept (Green, Carroll and Goldberg, 1981; Wind, 1973). De Bont (1992) defines a concept as a new product idea that is transformed into some kind of lasting medium (for example, textually or pictorially). In a concept test, respondents evaluate concepts on several criteria in order to select the most promising one(s) for further development. Conjoint analysis is a concept optimization procedure that is most often used to determine the effect of an attribute (level) on the preference for a new product concept (Stokmans, 1991). Both approaches aim to identify the most profitable new product that can be made, and what target group will optimize profits (De Bont, 1992).

Table 2.1: Characteristics of different approaches for investigating new product performance

Criterion	Concept testing Conjoint analysis Product testing	Pretest market tests Test marketing	Early sales models	Post-hoc correlation methods
Main objective	product optimization	sales forecast and launch effectiveness	generate sales pattern	identify determinants of NPD performance
Used for which types of new products?	all types	packaged consumer goods	consumer and industrial durables	all types
Suitable for products that differ in newness?	no	no	limited	yes
Are strategic launch decisions included?	limited	limited	limited	yes
Are tactical launch decisions included?	limited	yes	limited	yes
Type of data required	responses from customers	different sources	quarterly/annual sales data	many recent introductions
Multidimensional view of NPD performance?	limited	yes	no	yes
Evidence based on real introductions?	no	partly	yes	yes

In contrast to concept testing and conjoint analysis, in a product test the main functions of a new product are operative. Therefore, product testing evaluates the actual use and benefits of a new product and aims to understand how ingredients, engineering parts and designs affect product performance and customer perceptions of quality, as well as profit (Urban and Hauser, 1993). The other characteristics of product testing are identical to the characteristics of concept testing and conjoint analysis.

Pretest market tests and test marketing are approaches used to test the integrated new product including price, advertising and distribution. Firms use pretest market tests for evaluating frequently purchased products prior to test market. The inputs to a pretest market test are the physical product, advertising copy, price, channels of distribution and the advertising and

promotion budget. Through simulation, the output is a forecast of sales and diagnostics with regard to the launch strategy (Urban and Hauser, 1993). In a test market, a frequently purchased new product is launched in a limited but carefully selected part of the marketplace (Wind, 1982). Test markets make predictions based on a controlled field test conducted over a period sufficient to measure actual repeat purchase (Moore and Pessemier, 1993).

Early sales models (diffusion models) aim to forecast first-purchase sales volume (Mahajan and Wind, 1986). These models are a useful method for predicting the sales pattern of a new category of consumer or industrial durables. The inputs to an early sales model have traditionally been monthly, quarterly or annual sales data but recently attempts have been made to integrate strategic and tactical launch decisions.

Finally, post-hoc correlational methods focus on the experiences and outcomes of past new product introductions (Cooper, 1992). These methods assume that the way a new product is accepted in the marketplace will be close to the way other products in similar product-market situations are accepted (Choffray and Lilien, 1986). The inputs to the post-hoc correlational methods are characteristics of past new product introductions (for example, launch strategy decisions) while the outputs typically describe how identified correlates or determinants relate to new product performance.

Differences among the research approaches on the relevant criteria

Table 2.1 shows that the research approaches differ on several criteria. First, the *objectives* of the research approaches differ. Concept testing, conjoint analysis and product testing are powerful techniques for product optimization but they are less appropriate for investigating launch strategies because strategic launch decisions are usually not included. Early sales models are useful for predicting the sales pattern of a product category. However, these models provide limited insight in the impact of launch decisions on new product performance because time is in many early sales models the only explanatory variable (De Jonge and Oppedijk van Veen, 1982). Pretest market tests and test market models provide a prediction of the eventual market share as well as diagnostic insight into the effectiveness of the launch strategy. The post-hoc correlational methods describe how identified correlates or determinants relate to new product performance.

In addition, the *type of product* for which the approaches are developed differs. Pretest market models and test market models are primarily used for Fast Moving Consumer Goods whereas early sales models are used for predicting the sales pattern of a new category of durable goods. Concept tests, conjoint analysis, product tests and post-hoc correlational methods have been used for industrial and consumer products.

The usefulness of an approach also depends on the *newness* of the products considered. Concept tests, conjoint analysis, product tests and pretest market models are less useful for

completely new products because customers may lack the required knowledge to give valid answers. Early sales models focus on the sales pattern of a product category. Therefore, these models do not distinguish between products that differ in terms of newness. The determinants of new product performance can be investigated for products that differ in newness with the post-hoc correlational methods.

Further, the approaches differ to *the extent that strategic and tactical launch decisions are included.* Concept tests, conjoint analysis, product tests and diffusion models do not integrate these decisions to a sufficient degree whereas the pretest and test market models and the post-hoc correlational methods treat launch decisions in more detail.

The approaches also differ with regard to the *type of data required.* Data for pretest market tests typically come from simulated test markets, the proposed launch strategy and from the judgments of experienced marketers and researchers (Shocker and Hall, 1986). Early sales models need monthly, quarterly or annual product category sales data for several years (De Jonge and Oppedijk van Veen, 1982). Post-hoc correlational methods need data from many recent new product introductions.

Pretest market tests, test market models and post-hoc correlational methods include *different measures of new product performance.* Early sales models focus on the sales pattern of a new product category. These models do not include other measures of new product performance such as financial or technical performance measures. In a concept or product test, usually likability, interest, uniqueness, and purchase intention responses are obtained. Although several measures are used, these measures do not refer to the market or financial performance of the actual new product in the marketplace.

Finally, a first test of the *external validity* of the different research approaches is whether the approaches are based on real product introductions. Shocker and Hall (1986) argue that there are important differences in the effectiveness of a simulation of a launch strategy and implementing this launch strategy in the real world. Concept tests and product tests are not based on real product introductions but on concepts or working prototypes. Pretest market tests and test market models use data on past product category experiences as a part of a much larger database. Early sales models and post-hoc correlational methods are based on real market data.

The remainder of this chapter will discuss the five research approaches in more detail.[1] The choice of the most appropriate approach for the present research project will be discussed in section 2.7.

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[1] The literature review is confined to those approaches which are developed to predict the performance of *new* products. The literature on modeling marketing strategies for existing products will not be included. The interested reader is referred to Carpenter (1987), Lilien, Kotler and Moorthy (1992), Little (1975), and Naert and Leeflang (1988).

2.2 Concept testing and conjoint analysis

A concept is a textual, pictorial or software-generated representation of a new product idea (De Bont, 1992). Companies often test these concepts with a sample of customers to assess the probable performance of new products possibly derived from these concepts and to find ways to improve the concept (Moore and Pessemier, 1993; Wind, 1973). Concepts can be tested monadically, i.e., in isolation from competitive offerings, or in comparison with competing products (Batsell and Wind, 1980). In addition, a concept can be evaluated as a whole or on its constituent attributes. The latter view refers to multiattribute approaches for concept evaluation (see Shocker and Srinivasan (1979) for a critical review). In a concept test, usually likability, interest, uniqueness, purchase intention and responses to open-ended questions are obtained (Urban, 1975). Jamieson and Bass (1989) found that these factors are accurate predictors of actual trial purchase of the new product.

An approach that has become increasingly popular in the last two decades is conjoint analysis. Conjoint measurement can be used for the evaluation of new consumer goods (e.g., Page and Rosenbaum, 1987) as well as for industrial goods (e.g., Scott and Keiser, 1984). The conjoint approach determines the effect of an attribute or attribute level on the preference for a new product concept (Green and Wind, 1975; Stokmans, 1991; Wittink and Cattin, 1989). Conjoint analysis is based on the assumption that a product can be decomposed into separate attributes for which utilities can be computed. Once the utilities of the attribute levels are known, it is possible to specify a new product that should have maximum desirability (Moore and Pessemier, 1993). Although conjoint analysis is mainly a technique for concept optimization, more advanced versions have also been used to determine market share through discrete choice analysis (Green and Srinivasan, 1978). The predictive validity of these market share estimates is acceptable (Wittink and Montgomery, 1979).

The main objective of concept testing and conjoint analysis is product optimization. Both approaches are less useful for investigating the effectiveness of launch strategies because except for price and brand name (i.e., two tactical launch decisions), other tactical or strategic launch decisions are usually not included in these studies (Silk and Urban, 1978). Therefore, these approaches do not allow for investigating the interrelationships among the strategic and tactical launch decisions. In addition, both approaches are less appropriate for investigating the potential of breakthroughs (i.e., new-to-the-world products) because customers may have difficulties evaluating concepts for which limited knowledge and no reference product is available (Schoormans, Ortt and De Bont, 1995; Wilton and Pessemier, 1981). Further, although concept testing and conjoint analysis can be powerful techniques for concept and product refinement, they may be less appropriate for new product performance estimates because laboratory tests are

not completely representative of real life purchasing conditions (Urban and Hauser, 1993). Finally, concept testing and conjoint analysis provide limited diagnostic insights with respect to changes in market conditions (Mahajan and Wind, 1988). Therefore, concept testing and conjoint analysis appear not to be useful approaches for the present research project.

2.3   Product testing

A crucial characteristic of a concept is that its functions are not yet operative (De Bont, 1992). In contrast, in product testing the product integrates the main functions and therefore potential customers can evaluate *the actual use and benefits* of the new product. In addition, customers may evaluate the product-as-marketed. This means that also some tactical launch decisions such as branding or advertising can be tested. Such a procedure enhances the reliability and validity of the findings.

Urban and Hauser (1993) distinguish three approaches for product testing: laboratory tests, customer tests and expert evaluation. In a laboratory test potential customers evaluate alternative designs for a new product. Batsell and Wind (1980) mention several methodological problems in applying laboratory tests. For example, a disadvantage of laboratory tests is that they may not be completely representative of actual product use. Therefore, Urban and Hauser (1993) suggest that 'in-use' customer tests complement laboratory tests. In a customer test, products are tested (separately or in comparison with competing products) under realistic use conditions. A final method for product testing is expert evaluation. For example, expert tasters often evaluate new foods, and professional reviewers evaluate new books for literary prizes.

Product tests are most useful for measuring physical and psychological product attributes. Although product testing is well-suited for comparing the actual use of the new product with what was promised in the concept statement, it may not be the most appropriate method for predicting the impact of the launch strategy on new product performance because product testing suffers from many of the same drawbacks that concept testing and conjoint analysis have. For example, strategic launch decisions are usually not included in product tests. In addition, product tests provide limited diagnostic insights with respect to the impact of market conditions. Further, product tests may be less appropriate for investigating the potential of new-to-the-world products because customers may have difficulties evaluating products for which limited knowledge and no reference product is available. Finally, the performance estimates derived in product tests may be biased because laboratory conditions may not be completely representative of actual product use. Therefore, product testing is not an appropriate approach for the present research project.

2.4   Pretest market tests and test market models

In a pretest market test or in a test market, the integrated new product including price, advertising, and channels of distribution is tested. Both methods are generally more realistic but also more expensive than concept tests, conjoint analysis or product tests. These methods are more realistic mainly because more elements of the launch strategy can be included (Moore and Pessemier, 1993).

Firms use pretest market tests for evaluating new frequently purchased products prior to test market or prior to market launch. The objectives of such a test are to predict steady-state market share as well as to generate recommendations for improving the product, its pricing, and the advertising and promotion plans (Shocker and Hall, 1986). Pretest market models measure in a controlled way the trial and repurchase intentions of a target market toward a new product as a result of a certain proposed launch strategy (Urban, 1975).

Pretest market tests build on adoption theory. Rogers (1983) distinguishes five main steps in the adoption process of a customer: knowledge, persuasion, decision, implementation, and confirmation. *Knowledge* refers to a customer's awareness of the new product and the way it functions. At the *persuasion stage,* a customer forms a favorable or unfavorable attitude toward the new product, whereas the actual decision to try the new product is made at the *decision stage. Implementation* occurs when a customer puts the new product into use. At the *confirmation stage* the customer might seek additional information to justify or reverse its earlier decision (Van Everdingen, 1995; Rogers, 1983).

A pretest market test usually transforms these five steps into three different stages: awareness, trial, and repeat. Awareness is measured by unaided and aided recall of the brand and is supposed to be a function of advertising, coupons, word-of-mouth communication, free samples and other marketing activities such as in-store displays. Trial, i.e., the first purchase of a brand by a customer, is usually modeled to be a function of awareness, advertising copy, packaging, the intrinsic value of the product, and distribution issues like distribution weight, shelf positions and facings (Shocker and Hall, 1986). Repeat purchases, i.e., second and later purchases of the brand, are determined by trial and the direct experiences of the customer with the new product in-use.

The basic design concept of a pretest market test is to simulate the awareness-trial-repeat purchase process by controlled laboratory and product usage tests (Silk and Urban, 1978). The data for pretest market tests typically come from simulated test markets, the proposed launch strategy, past product category experiences and from the judgments of one or more experienced marketers and researchers (Shocker and Hall, 1986). Such a test provides estimates of the

percentage of aware consumers who will buy the product and the percentage of triers who will repurchase, for a given advertisement, product, and packaging plan.

Two of the oldest pretest market models are the Claycamp and Liddy (1969) model and NEWPROD (Assmus, 1975). Claycamp and Liddy (1969) developed a model for predicting consumer trials and repeat purchases as a function of controllable and uncontrollable variables. They validated their model with predictions for advertising recall and initial purchase levels, but not for repeat purchases or long term market share. The NEWPROD model predicts the market share for the first year after the product has been introduced into the national market.

More recent pretest market models are ASSESSOR (Silk and Urban, 1978) and NEWS/PLANNER (Pringle, Wilson and Brody, 1982). ASSESSOR (Silk and Urban, 1978) evaluates new packaged goods before test marketing when a launch strategy (including price, promotion, and advertising) has been formulated. The system predicts long-term market share, cannibalization, and draws from competitive brands. ASSESSOR further provides diagnostic information for product improvement and advertising copy, and for low cost screening of alternative launch strategies. The accuracy of ASSESSOR is promising: The correlation between pretest market shares and test-market shares was .95 before adjustment for achieved awareness, distribution, and sampling, and .98 after adjustment (Urban and Katz, 1983).

NEWS (Pringle, Wilson and Brody, 1982) generates forecasts of consumer awareness, trial, repeat purchase, usage, sales and market share for a new brand. The output, combined with diagnostics from the model, can be incorporated into the launch strategy. The NEWS model analyzes pretest market data (NEWS/Planner) and projects early test market data (NEWS/-Market).

Recently, some pretest market models have been developed for durable consumer goods (Urban, Hauser and Roberts, 1990; Urban, Hulland and Weinberg, 1993; Urban, Weinberg and Hauser, 1996). In these models, customers are defined to be in decision process states. Customers flow from one state to another through their information search behavior and through the launch strategies of the manufacturers. First, customers can become aware of a new product through word-of-mouth, advertising or both. If they become aware, they are 'in the market.' They can then decide whether they should visit a retailer. Finally, some customers receive word-of-mouth after visiting a retailer and others do not. Companies derive a sales forecast by aggregating the purchase probabilities of all customers in the different decision stages. Urban, Hauser and Roberts (1990) applied such a model successfully for new automobile forecasting.

Urban, Weinberg and Hauser (1996) illustrated how firms can face the challenge of forecasting customer reactions for a new-to-the-world product. They applied their new market measurement system based on a multimedia virtual buying environment for the case of an electric vehicle. Although the system provided valuable data on which to base managerial deci-

sions, it was not without weaknesses. For example, the costs of developing the system were high ($100,000 to $300,000) and the system could not simulate order of entry effects (see Szymanski, Troy and Bharadwaj (1995) for a critical review) that might result from earlier entrants gaining name recognition and initial adoptees.

Pretest market tests have several strengths (Shocker and Hall, 1986; Mahajan and Wind, 1988). First, they reduce the costs of developing and introducing new products prior to test market or prior to market launch. Further, they provide timely and relatively inexpensive data and diagnostics about the probable performance of a new product. In addition, it is easier to keep the results secret from competitors and to minimize their interference in comparison with conducting a test market. Finally, pretest market tests aim to optimize the launch strategy and increase managerial understanding of new product launch processes.

However, pretest market tests generally ignore market conditions and competitive reactions. Also, some parameterization is based on managerial judgement that may not be valid (Chakravarti, Mitchell and Staelin, 1981; Urban, Weinberg and Hauser, 1996). In addition, pretest market tests are mainly suitable for frequently purchased consumer goods in established product categories that are usually sold in supermarkets; the procedure is less applicable for line extensions, industrial products and new-to-the-world products. Further, pretest market tests are calibrated in a laboratory, so they may be unrealistic and unrepresentative from a customer's viewpoint (Moore and Pessemier, 1993). Finally, there are important differences in the effectiveness of a simulation of the launch strategy and implementing the launch strategy in the real world (Shocker and Hall, 1986). The external validity of a pretest market test can be enhanced by launching the actual new product on a small scale. This latter procedure is the purpose of test marketing.

A test market is a controlled experiment that is conducted in a limited but carefully selected part of the marketplace (Wind, 1982). It is the ultimate way to test a new product in a situation resembling the one that would be faced in a full-scale launch of the new product (Kotler, 1994). Test markets make predictions based on data from a field test conducted over a period sufficient to measure actual repeat purchase. Therefore, they normally run in three areas for 10 to 12 months (Moore and Pessemier, 1993). Narasimhan and Sen (1983) reviewed several models that evaluate test market results. They concluded that test markets are mainly used for two purposes: validation of the sales forecast made at the pretest market stage and evaluation of alternative launch strategies for the new product.

Early test market models are the model developed by Fourt and Woodlock (1960) and STEAM (Massy, 1969). Both models provide a sales and market share forecast. More recently, several models evaluate the new product's launch strategy besides providing a sales forecast. The best known test market model is TRACKER developed by Blattberg and Golanty (1978). This

model uses survey data to predict year-end test market sales from early test market results (i.e., usually three months). The model also provides diagnostic information about a new product's strengths and weaknesses including the new product's launch strategy.

Another well known test market model is SPRINTER (Urban, 1970). SPRINTER is a test market model that predicts national sales levels before national introduction. The model can also be used to recommend improved launch strategies, recommend a GO/NO GO decision, identify national launch problems and recommend solutions to them, and to generate revised sales forecasts (Urban, 1970). The data for this model come from six different sources: store audits, awareness surveys, consumer panels, salespersons' call reports, advertising media audits, and the firm's internal records.

Test markets offer several benefits. First, they provide diagnostic information about launch strategy decisions and competitive actions and reactions. Further, test markets can be indicative of market segment responses. In addition, test markets can provide insight in the impact of the new product on the firm's financial health and on the firm's other products. Finally, test markets are realistic in that they are based on real product introductions. Therefore, it is also possible to test trade and sales force acceptance, a factor that impacts the performance of a new product (Hultink and Thoelke, 1995; Montgomery, 1975).

However, test markets are expensive and run for a long time. Especially regarding the increasing emphasis on time to market, first-mover advantages, and shorter product development cycle times identified in the literature (see, for instance, Griffin, 1993, 1997; Urban et al., 1986), this characteristic may be a severe problem. Further, test markets, just like pretest market tests, are most appropriate for frequently purchased products in established product categories. The costs of running a test market for consumer durables or industrial goods are prohibitive. Finally, competitors can observe the new product and the intended launch strategy easily and may try to influence test-market results.

To conclude, pretest market tests and test market models are commonly developed for frequently purchased consumer goods and generally provide the eventual market share that the new product can be expected to capture and diagnostics about the most appropriate launch strategy. However, with neither of the approaches is it possible to compare launch strategies between consumer and industrial products or among products that differ in terms of newness. Therefore, pretest market tests and test market models should not be used for the present research project.

2.5 Early sales models (diffusion models)

The focus of early sales models or diffusion models is on the generation of the product-category life cycle to forecast the first-purchase sales volume (Mahajan and Wind, 1986). Early sales models are based on diffusion theory that addresses how an innovation is assimilated into a social system over time (Rogers, 1983). Diffusion theory contains two main processes, the adoption process and the diffusion process. The adoption process describes the steps an adoption unit goes through from the time an innovation becomes known until final adoption or rejection. This process is the main underlying theory for pretest market models (see section 2.4). Diffusion processes describe the spread of an innovation over time and across a population of potential adopters.

The models developed by Fourt and Woodlock (1960), Mansfield (1961) and Bass (1969) are regarded as the main drivers of diffusion research in marketing. The Bass model has become most popular. This model describes the diffusion process by the following differential equation:

$$dN(t)/dt = p \ [m - N(t)] + q/m \ N(t) \ [m - N(t)]$$

Where $N(t)$ is the cumulative number of adopters at time t, m is the ceiling or the population of potential adopters, p is the coefficient of innovation, and q is the coefficient of imitation. The first term in the equation denotes the adoption by innovators and the second term adoption by imitators. The parameters p, q and m are estimated with multiple regression analysis from historical sales data. The main question to be answered in this basic model is: If there are m number of potential customers in the market, how many will have bought the product by time t (Mahajan and Muller, 1979)?

The underlying behavioral theory in the development of this model is that new product acceptance is a communication and imitation process (Rogers and Shoemaker, 1971). Bass (1969) views the first buyers into the market as 'innovators'. This group of market initiators (Foxall, 1994) is influenced by mass-media communication. The rate at which they enter the market is estimated by the parameter p, the coefficient of innovation. Through word-of-mouth communication, these innovators have an effect on the purchase probability of potential buyers (Leonard-Barton, 1993). Potential buyers who are influenced and purchase the new product afterwards are called 'imitators'. The rate at which they enter the market is estimated by the parameter q, the coefficient of imitation. Sultan, Farley and Lehmann (1990) conducted a meta-analysis of applications of diffusion models and concluded that the average values for p and q were .03 and .38, respectively.

The Bass model and its revised forms have been used for forecasting innovation diffusion in many industries including consumer durables (Bass, 1969; Bayus, 1987, 1992; Bayus, Hong and Labe, 1989; Heeler and Hustad, 1980, Kalish and Lilien, 1986; Mahajan and Peterson, 1979), industrial durables (Easingwood, 1987, 1988; Sinha and Chandrashekaran, 1992; Sinha and Lilien, 1992), and high-tech products (Easingwood and Lunn, 1992; Norton and Bass, 1987).

The Bass model has some important conceptual assumptions (Mahajan and Peterson, 1985; Mahajan and Wind, 1986; Mahajan, Muller and Bass, 1990). For example, the Bass model assumes that product and market characteristics do not influence diffusion patterns and that the diffusion of an innovation is not influenced by launch strategies. These assumptions are unrealistic. The predictive value of models may be enhanced by relaxing the assumptions (Friedman, 1953). Therefore, several attempts have been made to relax some of these assumptions.

For example, Robertson and Gatignon (1986) propose that both the supply-side and the adopter industry competitive environments impact the diffusion of a new product. Gatignon and Robertson (1989) conducted an empirical test of competitive effects on technology diffusion, and found that firms most receptive to innovation were in concentrated industries with limited price intensity, whereas supplier incentives and vertical links to buyers were also important in achieving adoption.

In addition, the Bass model does not explicitly consider the impact of product characteristics on diffusion patterns (Mahajan, Muller and Bass, 1990). However, Rogers (1983) found that five new product characteristics influence the rate of adoption of a new product: relative advantage, compatibility, complexity, trialability and observability. Rogers (1983) hypothesized that relative advantage, trialability, compatability and observability were positively and complexity negatively related to the degree of adoption. Tornatzky and Klein (1982) conducted a review and meta-analysis of 75 articles concerned with new product characteristics and their relationship to adoption and implementation. They concluded that three new product characteristics had the most consistent significant relationships to innovation adoption. Compatibility and relative advantage were positively, and complexity negatively related to new product adoption.

Therefore, some attempts have been made to integrate product and market characteristics in diffusion models. For example, Kalish and Lilien (1986) studied the impact of product characteristics on diffusion patterns while Gatignon, Eliashberg and Robertson (1989) examined the impact of market characteristics on the diffusion pattern of a new product. Both attempts showed successfully the relevance of including product and market characteristics in future research on innovation diffusion.

Finally, a major criticism of the basic diffusion models is that they are of little use to the new product manager because the launch strategy employed by a company is not explicitly included in the models (Mahajan and Wind, 1986). This exclusion is problematic because the

launch strategy is an important determinant of new product performance (see, for instance, Cooper, 1979; Frambach, 1993; Link, 1987; Rothwell et al., 1974; Sultan et al., 1990; Yoon and Lilien, 1985). Therefore, several attempts have been made to integrate strategic and tactical launch decisions in diffusion models.

One of the first attempts to include launch decisions in a diffusion model was reported by Robinson and Lakhani (1975). They included the impact of price (i.e., a tactical launch decision) in the Bass model, and concluded that the optimal price over the product life cycle should be increasing at introduction, and then decreasing. The intuitive explanation for this finding is that innovators and early adopters should be subsidized to try the new product, because the word-of-mouth they spread will have a strong positive effect on later adopters. Bass and Bultez (1982) and Kalish (1983) investigated the optimal pricing strategies when costs decline with experience. They conclude that price should decrease monotonically over time (i.e., a skimming strategy). Dolan and Jeuland (1981) confirmed these results. The explanation for this finding is that it is possible to sell the product at a high price early to those who are willing to pay the price, and then to decrease the price over time to reach additional segments (Kalish and Sen, 1986). Although the results of these approaches are conceptually meaningful, they lack empirical validation. Some *empirical* contributions concerning the integration of price in diffusion models have been provided by Kamakura and Balasubramanian (1988) and Jain and Rao (1989). They concluded that price affects the rate of diffusion through the coefficients of external and internal influence (p and q), rather than through the coefficient of the market potential m.

Gould (1970), Horsky and Simon (1983) and Simon and Sebastian (1987) included the impact of advertising in diffusion models. Gould's (1970) model is normative and shows that advertising spending should be high initially and decrease monotonically afterwards if the initial number of aware individuals is low. Horsky and Simon (1983) treat the coefficient of external influence p as a function of advertising spending. They showed empirically that optimal advertising expenditures should be monotonically decreasing over time, which is consistent with Gould (1970). Simon and Sebastian (1987) incorporate cumulative advertising expenditures into the coefficient of imitation q. Their data supported this argument empirically. Finally, Dodson and Muller (1978) include advertising and word-of-mouth, and Kalish (1985) incorporated price and advertising in a diffusion model. Both models were not tested empirically, however.

Other launch decisions have been included in diffusion models by Jones and Ritz (1987), Kalish and Lilien (1986), Lilien, Rao and Kalish (1981), and Mahajan, Muller and Kerin (1984). For example, Jones and Ritz (1987) show that the coefficient for market potential m depends on the growth in the number of retailers carrying the new product. Kalish and Lilien (1986) and Mahajan et al. (1984) include the timing decision (i.e., a strategic launch decision). The question in their research was to investigate when a new product should be released. Kalish and Lilien

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(1986) showed that the decision to enter the market should be timed to balance the risks of premature entry (too early) and the problems of missed opportunities (too late). An entry too early may risk pushing an underdeveloped product into the marketplace, while a product may sacrifice sales if entry is delayed too long. Finally, Lilien, Rao and Kalish (1981) consider the effect of personal selling on new product diffusion. Kalish and Sen (1986) provide an overview of the incorporation of launch strategy decisions in diffusion models. They mention that the main focus of many models was the normative implications for marketing management. Most models were useful in establishing working hypotheses but lacked empirical validation.

To conclude, early sales models are a useful method for predicting the sales pattern of a new category of consumer or industrial durables. The models are calibrated on real market data and have, therefore, a high degree of external validity. However, early sales models provide only limited diagnostic insights with respect to the impact of the launch strategy. The attempts that have been made to include launch decisions usually considered one launch decision at a time. The integration of several launch decisions simultaneously in a diffusion model has so far been unattainable. Therefore, early sales models do not allow for investigating the interrelationships among the launch decisions. In addition, early sales models only focus on sales patterns and not on other measures of new product performance. Therefore, with early sales models, it is not possible to investigate the impact of launch strategies on several measures of new product performance.

Another limitation of diffusion models is the requirement that a sales history for the new product should be available to derive the parameters of the model. For some types of products such a sales history is not available. Heeler and Hustad (1980) show that early sales models are not stable with limited data and systematically underreport the estimated time to attain peak level of first purchase sales. Therefore, Easingwood (1989) and Thomas (1985) suggest using the sales histories of products that can be considered to have analogous features from a buyer' point of view.

Finally, an important limitation of early sales models for investigating the impact of launch strategies on new product performance is that these models focus on the product category level and not on the individual new product level (Bayus, 1994). Therefore, early sales models are more appropriate for predicting the total sales of all competitors on the marketplace than for estimating the performance of product X by company Y. Therefore, early sales models are not an appropriate research approach for the present research project.

The last method covered in this chapter focuses on the individual new product level. This method, which relies on the track record of past new product introductions, is called the post-hoc correlational approach.

2.6 Post-hoc correlational methods

The ultimate test of a new product's commercial value is after introduction. Therefore, several studies have focused on the experiences and outcomes of past new product introductions (Cooper, 1992). This approach refers to the post-hoc correlational methods in predicting new product performance. Such methods assume that the way a new product is accepted in the marketplace resembles the way in which similar products in 'look-alike' product-market situations have been accepted (Choffray and Lilien, 1986). Similarly, post-hoc correlational methods have also been used for investigating the impact of strategic business unit (SBU) strategies on performance. For example, Buzzell and Gale (1987) collected data on 3000 SBUs. They showed that general relationships between strategy and performance can be found by analyzing the experiences of many companies across several industries. Validation studies have indicated that the predictive ability of these methods is promising. For example, the NewProd system (Cooper, 1985, 1992) revealed a predictive ability of 73% to 84%. This means that about 80% of the new products were correctly classified as successes or failures by the system.

The remainder of this chapter discusses the post-hoc correlational studies in the following way: First, generalist NPD studies will be reviewed. Generalist studies investigate different sets of variables with respect to their impact on new product projects and programs (Craig and Hart, 1992). Then, specialist studies on the impact of the launch strategy on new product performance will be discussed.

2.6.1 The generalist studies

The first stream of generalist studies that appeared in the literature focused on failed products (Calantone and Cooper, 1979; Cooper, 1975; Hopkins and Bailey, 1971). The main philosophy of this postmortem approach was to identify the major reasons why new products failed so companies could learn how to do better next time. Hopkins and Bailey (1971) identified the following causes of new product failure (in descending order of importance): inadequate market analysis, product problems or defects, lack of effective launch effort, higher costs than anticipated, competitive strength or reaction, poor timing of introduction, and technical or production problems.

Cooper (1975) investigated 114 industrial products and focused on the question if, and how adequately, several activities had been conducted. The detailed market study was the most deficient activity in the entire new product process. Other deficient activities were (in rank order of decreasing importance): test marketing or trial sell, product launch, detailed financial/business

analysis, customer field trials, and preliminary market assessment. Calantone and Cooper (1979) identified six scenarios of new product failures:

1. The better mousetrap that nobody wanted: This is usually a technology-driven product that is developed internally with little attention paid to the needs and wants of the marketplace.
2. The 'me-too' product that meets a competitive brickwall: This type of new product is often identical in price and features to products already competing in the marketplace; customers have no reason to switch.
3. Competitive one-upmanship: Competitor responses to entry are the major reason for failure in this scenario.
4. The technical dog: The product has many bugs, does not work, or falls short of performance requirements.
5. Price crunch: The product is priced too high, mainly because too many features are built into the new product.
6. Plain and simple ignorance: This scenario results from a complete misreading of the external environment (customers, competitors, and government).

More recent studies on the causes of new product failure have been conducted by Link (1987) and Sarin and Kapur (1990). Link (1987) investigated the perceived determinants of 135 industrial new product failures. New products were more likely to fail when the market was too competitive, when insufficient market research was done prior to launch, when the product was not new and offered negligible savings or other benefits to users, and when inadequate sales force, promotion, and advertising strategies were followed. Sarin and Kapur (1990) investigated five case studies of new product failures. The causes of new product failures resemble the findings given above.

Therefore, the studies that focused on failed products identified the following general causes of NPD failure: product defects and technical problems, insufficient market and customer analysis, higher than anticipated development costs and inadequate launch strategy decisions with respect to the timing of the launch, the choice of product newness, target market selection, promotion, salesforce and advertising.

A second stream of research, initiated by Myers and Marquis (1969) focused on successful new products. This approach resembles the benchmarking technique that is becoming increasingly popular nowadays in the academic and business worlds. In a similar approach as Peters and Waterman (1982) used to analyze successful companies, this stream of research tries to identify why some companies are better at developing and launching new products than their less successful counterparts.

Myers and Marquis (1969) investigated 567 successful product innovations in 121 firms in five industries (railroad, railroad supplies, computer manufacturers and computer supplies, and housing suppliers). They concluded that most successful products were market-pull, and not technology-push, projects. Roberts and Burke (1974) investigated six successful new products developed at the General Electric laboratories. They found that for these products, market needs were better recognized, and R&D was targeted at satisfying those needs. In addition, inter-functional communication about technological breakthroughs and market needs was well organized.

Link (1987) investigated the perceived determinants of 135 industrial new product successes. New product performance was perceived to be higher when the new product could benefit from synergy with existing marketing, technical, and manufacturing skills, when the new product offered high product quality and significant user benefits, and when appropriate targeting, pricing and distribution strategies were followed.

To summarize, the studies that focused on successful products identified the following general causes of NPD success: a market oriented NPD process, technological and marketing synergies, interfunctional communication and adequate launch strategy decisions regarding timing, targeting, pricing and distribution.

The problem with both approaches, i.e., only investigating successful or failed products, is that only one side of the coin has been looked at. Since successes are not compared with failures, it is unknown which factors discriminate between the two (Cooper, 1993). Therefore, Project SAPPHO (1974) looked at successful as well as at unsuccessful products. This approach has been replicated by Cooper (1979, 1982, 1985), Cooper and Kleinschmidt (1986, 1987a, 1988), Maidique and Zirger (1984), Moenaert (1991) and many others. Montoya-Weiss and Calantone (1994) found in their meta-analysis of NPD performance studies that of the 47 empirical studies analyzed, 77% examined both successes and failures. They attributed this dominance of the dyadic performance perspective to the impact of influential early studies (Project SAPPHO, Project NewProd and the Stanford Innovation Project), to be reviewed below.

The British Project SAPPHO (Rothwell et al., 1972, 1974) compared 43 pairs of successful and unsuccessful new products. Of the 122 variables studied, 41 discriminated between success and failure. Discriminating factors between successful and unsuccessful new products were the understanding of users' needs, the attention given to the market launch, the efficiency of development, the effective use of outside technology and the external scientific communication, and the seniority and authority of responsible managers.

Project SAPPHO has been repeated in different countries. For example, Rothwell (1976) studied new products in the Hungarian electronics industry, Utterback et al. (1976) compared the process of innovation in five industries in Europe and Japan, and Kulvik (1977) studied new

product introductions in Finland. Although most findings were similar to those reported in the original U.K. study, additional factors underlying new product performance were identified including a good product/company fit, exploiting market opportunities better, and using the technological know-how of the company.

Project NewProd (Cooper, 1979, 1980, 1982) measured 77 variables for 102 successful and 93 unsuccessful products from 103 firms. Factor analysis of the scores on the 77 variables resulted in 18 dimensions of new product performance. Linear discriminant analysis was used to relate group membership (success or failure) to the 18 factors. A new product was more likely to become successful when the new product was market derived, unique and superior, when the new product was launched with a strong launch effort in a large, high need growth market with few new product introductions and few competitors, and when the new product had a good product/company fit with respect to managerial, marketing, production and technical resources. The NewProd study has also been replicated in many countries, including Australia (Dwyer and Mellor, 1991, 1993), Belgium (Vanden Abeele and Christiaens, 1986), China (Song and Parry, 1994), and The Netherlands (Bronnenberg and Van Engelen, 1988). The results were generally consistent with Cooper's earlier work.

The Stanford Innovation Project (Maidique and Zirger, 1984; Zirger and Maidique, 1990) undertook a study of new product performance in the U.S. electronics industry. Maidique and Zirger (1984) compared 59 pairs of successes and failures. The results showed that new product performance is likely to be higher when the new product offers a high performance-to-cost ratio and a high contribution margin to the firm, when the new product is launched with a high level of top management support and with large resources for selling and promotion into the market early, and when the create, make, and market functions are well interfaced and coordinated. These results were used to build a model of NPD. This model was empirically tested by Zirger and Maidique (1990). They investigated 86 pairs of new products in the electronics industry, and found that the following factors influence new product performance: quality of the R&D organization, technical performance of the product, product's value to the customer, synergy of the product with the firm's existing skills, top management support, launch and manufacturing competence, market competitiveness and market potential.

To conclude, the studies that focused on the factors that discriminate between successful and unsuccessful new products identified the following general causes of NPD performance: a market oriented NPD process, technological and marketing synergies, NPD efficiency, interfunctional coordination, R&D quality, top management involvement and support and adequate launch strategy decisions regarding timing, target market selection, product newness, pricing, promotion and distribution.

The three research streams (looking at successes only, failures only or both) have identified many factors that impact new product performance. Although not completely identical, the three research streams tend to derive similar results (Craig and Hart, 1992). For example, all three approaches suggest that launch decisions are important for attaining success. Therefore, some specialist studies on the impact of the launch strategy on new product performance have been conducted in the last 15 years. The next section will review these studies.

2.6.2 The specialist studies

Several authors have dealt with the launch strategy for new products. For example, Greenley and Bayus (1994) describe in what ways companies tackle decisions on whether or not to launch new products. Wind and Mahajan (1987) argue for the recognition of the process of marketing hype, a set a marketing activities and decisions leading to the creation of a supportive market environment. Lucas and Bush (1984) provide guidelines for marketing a new industrial product, whereas Dundas and Krentler (1982) suggest the use of a critical path method for launching a new industrial product. Calantone and Montoya-Weiss (1993) describe a launch plan in terms of identifying target markets, establishing market mix roles, forecasting financial outcomes and controlling the project while Beard and Easingwood (1992, 1996), Coskun Samli and Wills (1986), Stone (1985) and Traynor and Traynor (1989) investigate which decisions managers make for launching high-technology products. While insightful with regard to the launch decisions studied, these studies provide no information on the impact of selected launch decisions on new product performance.

However, the impact of the launch strategy on new product performance has been investigated empirically by Biggadike (1979), Choffray and Lilien (1984, 1986), Gatignon, Weitz and Bansal (1990), Green, Barclay and Ryans (1995), Green and Ryans (1990), Hultink and Schoormans (1995), Lambkin (1988, 1992), Robinson and Fornell (1985), Ryans (1988), Urban et al. (1986) and Yoon and Lilien (1985). Although there is no consensus in this literature about which managerial decisions constitute a launch strategy (Green, Barclay and Ryans, 1995), most authors derive similar conclusions concerning the impact of selected launch strategy decisions on new product performance. Table 2.2 summarizes the findings from the specialist studies.

Table 2.2: Previous findings from the specialist studies

New product performance is likely to be higher when:

Strategic Launch Decisions

Product strategy
- product is relatively more innovative   1
- product is reformulated, not completely new   2,3,11
- product development cycle time is shorter   2,3
- product quality/uniqueness is higher   1,4,5,6,8,9,10,11

Market strategy
- scale of market entry is broader   1,8,9
- product-class life cycle is in an early stage   1,11,13
- market growth rate is low   13
- market growth rate is high   1,4,11
- degree of competitiveness in the market is low   1,3,5,6,8,9,10,11

Firm strategy
- timing of launch is relatively early   1,2,3,5,6,8,9,10,11,12

Tactical Launch Decisions

Product
- breadth of product assortment is relatively broader   1,8,9,10
- breadth of product assortment is smaller   7

Distribution
- relative distribution effort is higher   5,6,9,13

Pricing
- relative price is lower   1,2,3,8,9,10
- penetration pricing is followed   7
- skimming pricing strategy is followed   7

Promotion
- relative advertising effort is higher   3,5,8,9,10,12,13
- relative level of magazine coverage is higher   5
- salesforce pressure is higher   2,3,4,6,8

Key:	1:	Biggadike (1979)	8:	Lambkin (1988)
	2:	Choffray and Lilien (1984)	9:	Lambkin (1992)
	3:	Choffray and Lilien (1986)	10:	Robinson and Fornell (1985)
	4:	Gatignon, Weitz and Bansal (1990)	11:	Ryans (1988)
	5:	Green, Barclay and Ryans (1996)	12:	Urban et al. (1986)
	6:	Green and Ryans (1990)	13:	Yoon and Lilien (1985)
	7:	Hultink and Schoormans (1995)		

For example, Biggadike (1979) investigated the impact of the launch strategy on new product performance by analyzing data from 40 new SBUs. Market performance was higher when the product-class life cycle was in the introduction stage, the market structure could be characterized as a loose oligopoly, the market growth rate was high, the product was relatively more innovative, the scale of entry and the breadth of assortment were broad, product quality was high and when relative price was low. Financial performance was higher when the product-class life cycle was in an early stage, the market growth rate was high, the breadth of product assortment was broad and when relative price and product innovativeness were low.

Another example of a specialist study is the decision-support system for evaluating launch strategies for new industrial products developed by Choffray and Lilien (1986). They developed a database of 112 individual new products introduced in France. The following determinants were found to impact short term new product performance: a short NPD process, a reformulated (and not a new-to-the-world) new product, few competitors of importance and a lower relative price. Long term new product performance was higher when the relative sales force pressure was high, the relative price was low, no new competitors entered the market, the R&D effort after launch was low, the pricing strategy was free of restrictions and when customers were not highly satisfied with existing products.

The findings from Table 2.2 suggest that new product performance is likely to be higher when the launch strategy is more aggressive in terms of strategic objectives and marketing expenditures. More specifically, when a firm spends relatively more than its competitors on advertising, salesforce promotion and distribution and when the firm's strategy is more aggressive in terms of a large entry scale, a broad product assortment and low prices, new product performance is likely to be higher. Target market selection also appears to be an important launch decision. Companies should aim for noncompetitive markets that are in an early stage of the product life cycle.

Disagreement exists among the specialist studies on the impact of the market growth rate and the breadth of product assortment on new product performance. Biggadike (1979), Gatignon, Weitz and Bansal (1990) and Ryans (1988) found that a high growth rate was related to NPD performance while Yoon and Lilien (1985) suggest that a firm would benefit most from a slow growing market. Moriarty and Kosnik (1989) offer an explanation for this finding. Although a high growing market offers more potential for new entrants, some short-run demand may be unexpected, so that the company may be unprepared to respond appropriately. Further, a considerable amount of a business' production capacity may be fixed in the short term and adjustments are usually slow. Finally, if entry is easy for new sellers, new competitors will easily enter and capture some profits and decrease profitability when market demand increases.

In addition, several studies found that broad product assortments contribute to new product performance (Biggadike, 1979; Lambkin, 1988, 1992; Robinson and Fornell, 1985) while Hultink and Schoormans (1995) suggest that product assortments should be small. An explanation for this disagreement is that the latter study focused on new high-tech products. Hisrich and Peters (1991) suggest that especially in the introduction stage of the product life cycle of a new-to-the-world high-tech product companies only confuse customers and dealers with a broad assortment.

Some caution should be applied when the findings from Table 2.2 are interpreted. First, it is difficult to compare the results across the empirical studies because different measures of new product performance have been used. Some authors used financial performance measures like profit or ROI while other authors used measures of market acceptance such as unit sales or market share. It is questionable whether the findings of the different studies can be aggregated to a single agreed upon effect. For example, Hultink and Schoormans (1995) found that skimming and penetration strategies can both be successful. However, the choice between both pricing strategies should depend on the type of performance desired (i.e., sales or profit).

Second, some specialist studies focused on industrial new products while others focused on consumer durables or packaged goods. It may not be valid to transfer the accumulated knowledge on successful industrial product launches to consumer products and vice versa.

2.7   So which research approach is most appropriate?

The present chapter reviewed five different research approaches for investigating the correlates or determinants of new product performance. The applicability of the five approaches for the present research project differs. Several criteria were formulated for choosing a useful approach. First, a useful approach should allow for analyzing a number of strategic and tactical launch decisions so that interrelationships among the launch decisions can be investigated. In addition, it was argued that it is necessary to choose an approach that is suitable for products that differ in terms of newness and that can be applied to consumer and industrial products in several countries. Finally, the approach should take a multidimensional view on new product performance.

Whatever decision rule is used, it is clear from Table 2.1 that the post-hoc correlational methods serve the research objectives of the present study best. If a researcher wants to compare the impact of a launch strategy on several dimensions of new product performance for different types of new products (for example, industrial versus consumer products) in several countries, the other approaches do not suffice.

However, choosing a post-hoc correlational approach for the present study still leaves many other questions to be answered. For example, which launch decisions should be included and how should these decisions be operationalized? Which relationships among the launch decisions and new product performance should be predicted? Chapter Three will deal with these questions. This discussion will result in a conceptual model and a set of ten hypotheses.

3. CONCEPTUAL MODEL AND HYPOTHESES[1]

Chapter Two discussed five research approaches for investigating the correlates and deter-
minants of new product performance. Comparing those approaches on several relevant criteria
showed that post-hoc correlational methods were most useful for investigating the impact of
strategic and tactical launch decisions on new product performance. The generalist studies
showed that the launch strategy is an important determinant of new product performance while
the specialist studies provided specific links between launch decisions and performance.

However, several shortcomings were identified in the specialist studies. First, there was no
consensus about the managerial decisions that constitute a launch strategy, and further, a major-
ity of the studies included only a small subset of launch decisions in their investigations. In
addition, differences in launch decisions between consumer and industrial products, and among
different countries of introduction, have not been addressed. Finally, despite of the suggested
relevance of developing internally consistent launch strategies, previous studies have not
addressed interrelationships among launch strategy decisions.

Chapter Three seeks to fill these gaps in current knowledge by developing a conceptual
model for studying launch strategies, by developing a more complete definition of launch
strategies, by focusing on launch strategy differences between product types and among
countries of introduction, and by addressing interrelationships among the launch decisions. First,
this chapter presents a conceptual model and discusses the interrelationships among the building
blocks in the model. Then, the hypotheses for the present research project will be formulated.
Chapter Three concludes with the operationalization of the independent variables (i.e., the
strategic and tactical launch decisions). The definition and operationalization of the dependent
variable (i.e., new product performance) will be discussed in Chapter Four.

3.1 Building the conceptual model

The purposes of the present research project were to provide a more complete understanding of
launch strategies and to analyze the impact of particular launch decisions on new product
performance. Because of these purposes, and the fragmentary nature of the research that preced-
ed this study, the present research is exploratory in nature. The first step in the research was to

[1] Parts of this chapter appeared in Hultink, E.J. and S. Hart (1996). The world's path to the better mousetrap: Myth
or reality? In: Berács, J., A. Bauer and J. Simon (Eds.). *Marketing for an Expanding Europe,* European Marketing
Academy, Budapest, Hungary, p. 597-622.

develop a more complete definition of launch strategies and a conceptual model of how launch strategies impact new product performance. To do this, a rigorous identification of launch strategy decisions was carried out both by reviewing the previous launch strategy studies and by interviewing managers responsible for making launch decisions.[2]

The literature review focused on the empirical research already demonstrating links between particular launch decisions and new product performance (i.e., the specialist studies). This review provided a broad initial list of variables which would need to be investigated in a more inclusive study of launch strategies which tries to comprehensively define important components of launch strategies. Variables included in the 13 specialist studies are summarized in Table 3.1.[3]

Some specialist studies investigated the special context where an SBU begins to compete in a product-market in which it did not previously operate. These studies (1-6 in Table 3.1), referred to as 'market entry' studies, always involved entry into a new market and may or may not involve a new-to-the-company product. In the other set of research in this area, the 'product development launch' studies (7-13 in Table 3.1), product launch always involved a changed or totally new-to-the-company product that may be directed into either a new or old market.

The qualitative interviews added an additional decision category to the definitions of what constitutes a launch strategy: Managers need to decide which branding policy to use in constructing launch strategies. More important, these interviews provided insight into how launch decisions are structured in time. Managers indicated that many launch decisions occur after conceptual and physical development of a new product is complete. These are the *tactical launch decisions* generally involving marketing mix adjustments. These decisions govern the *how* of the launch and include all the aspects of the marketing mix: product tactics, distribution, pricing and promotion.

However, a significant part of the launch decisions occurs prior to making the tactical launch decisions, and even prior to development (Biggadike, 1979). These are the *strategic launch decisions* which, once made, are difficult or expensive to change later during development. While they are set apart in time from the tactical launch decisions, they are very much a

[2] Twelve managers from eight companies (e.g., Giant, Kodak and Unilever) were interviewed. The interviewees were product managers, marketing managers or general directors working in the consumer durable (5), packaged goods (2), transport/communication (2) and construction/installation (3) industries. Interviews usually lasted about one and a half hour.

[3] Two of the variables in Table 2.2 were phrased differently in Table 3.1. 'Scale of market entry' was redefined as 'targeting strategy' because managers indicated that the latter term was more common in marketing practice. 'Product quality and uniqueness' was redefined as 'customer perceptions of the new product.' The interviews showed that this term was more appropriate for consumer and industrial new products in contrast to the first term which was less usable in consumer markets.

Table 3.1: Key decisions in launching a new product

Decision	Previous study
Strategic Launch Decisions	
Product strategy	
- relative product innovativeness	1,7,8,10,13
- NPD cycle time	3,7,13
- product newness	1,6,7,8,13
- perception customers	1,7,8,11,13
Market strategy	
- targeting strategy	1,4,5,11
- market growth rate	1,3,5,6,9,13
- stage of the product life cycle	1,6,13
- market competitiveness	1,2,3,5,6,7,8,9,11,12,13
Firm strategy	
- timing strategy	1,2,3,4,5,6,11,12,13
- NPD driver	7,8
- objectives	7,13
Tactical Launch Decisions	
Product tactics*	
- breadth of assortment	1,4,5,10,11
Distribution	
- distribution channels	1,7,13
- distribution intensity	1,2,3,4,5,7,8,9,13
Pricing	
- pricing strategy	7,8,10,13
- relative price level	1,2,4,5,7,8,9,11
Promotion	
- promotion expenditures	1,2,3,4,9,10,11,12,13
- marketing communication instruments	2,7,9,10

Key	*Market Entry Studies*		*Product Development Launch Studies*
	1 Biggadike (1979)	7	Choffray and Lilien (1984)
	2 Green, Barclay and Ryans (1995)	8	Choffray and Lilien (1986)
	3 Green and Ryans (1990)	9	Gatignon, Weitz and Bansal (1990)
	4 Lambkin (1988)	10	Hultink and Schoormans (1995)
	5 Lambkin (1992)	11	Robinson and Fornell (1985)
	6 Ryans (1988)	12	Urban et al. (1986)
		13	Yoon and Lilien (1985)

* branding policy was added after the interviews

part of the launch strategy as they set the strategic context into which the new product will ultimately be launched. To give a few examples: as a cost-reduced version for certain market segments or geographic regions, or as a set of solutions for a special segment of the market. In other words, managers suggested that all or most of the tactical launch decisions are related to the strategic launch decisions already made. Therefore, the strategic launch decisions made earlier in the NPD process influence how tactical launch decisions are made later, closer to commercialization.

Neither the 'market entry' nor the 'product development launch' studies provided insight into the direction and strength of the interrelationships between tactical launch decisions and the strategic aspects of product launches as the interviewed managers suggested occurred. Including both levels of decisions is necessary as both influence the nature of the overall launch strategy (Biggadike, 1979). Equally important, however, is to describe the interrelationships between and within the two sets of variables since a new product launch strategy, like other aspects of marketing, is based on a mix of elements that must be mutually reinforcing to produce success (Biggadike, 1979; Green, Barclay and Ryans, 1995; Kotler, 1994; Wind, 1982). The performance of the product in the marketplace, then, depends upon the specific strategic launch decisions made early in the process, the specific tactical launch decisions made later in the process, and the alignment achieved across both groups of decisions.

Figure 3.1 depicts the interrelationships between strategic launch decisions, tactical launch decisions, and new product performance in a conceptual model. This model differs from earlier launch strategy models (e.g., Green, Barclay and Ryans, 1995; Green and Ryans, 1990) because it explicitly recognizes that strategic and tactical launch decisions are related. So far no study on launch strategies has been inclusive enough in their definition of what a launch strategy encompasses to allow interrelationships between strategic and tactical launch decisions to be determined. In addition, the model recognizes that new product performance has several dimensions (Hart, 1993; Griffin and Page, 1993, 1996; Hultink and Robben, 1995a). Chapter Four will deal with the definition and operationalization of new product performance in detail. Finally, the model hypothesizes that strategic and tactical launch decisions will differ between consumer and industrial products and among countries of introduction. Below, the hypotheses for the present study will be discussed in more detail.

3.1.1 Strategic launch decisions

Strategic launch decisions, as in Crawford's (1984, 1994) product innovation charter, Cooper's (1993) protocol or Biggadike's (1979) posture define the boundaries of the program (Booz, Allen and Hamilton, 1982) and guide the development process. They set the strategic context into
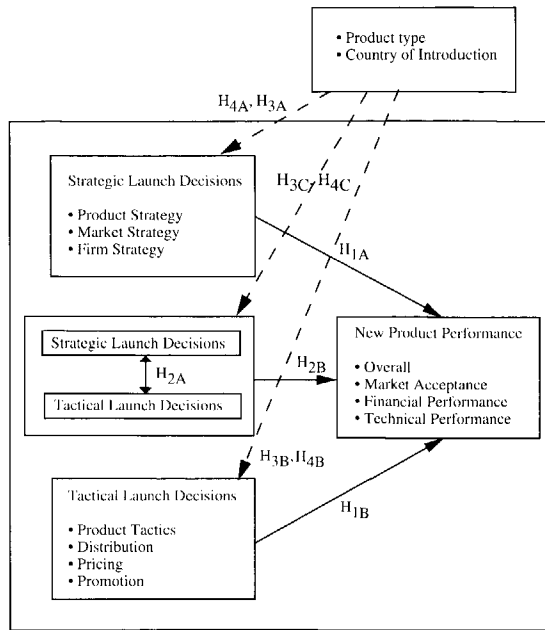
Figure 3.1: A conceptual model for investigating launch strategies.

which the new product ultimately will be launched and govern key elements of the tactical launch. These strategic launch decisions encompass the elements of the project's product strategy, market strategy and firm strategy (Biggadike, 1979; Cooper, 1993; Crawford, 1984, 1994), answering the *what, where, when and why to launch* questions.

Product strategy aspects previously associated with new product launch strategies (see Table 3.1) include the new product's newness to the firm and to the market (Biggadike, 1979; Ryans, 1988; Choffray and Lilien, 1984, 1986; Yoon and Lilien, 1985), the product's relative innovativeness in comparison with competing products (Biggadike, 1979; Choffray and Lilien, 1984, 1986; Hultink and Schoormans, 1995; Yoon and Lilien, 1985), NPD cycle time (Green and Ryans, 1990; Choffray and Lilien, 1984; Yoon and Lilien, 1985), and customers' perceptions of the new product (Biggadike, 1979; Choffray and Lilien, 1984, 1986; Robinson and Fornell, 1985; Yoon and Lilien, 1985).

Product strategy aspects have been found to impact new product performance (see Table 2.2). For example, Choffray and Lilien (1984, 1986) and Ryans (1988) found that reformulated new products were more successful than completely new products. Biggadike (1979) showed that new product performance is likely to be higher when the new product is more innovative

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than competitors' products, while Choffray and Lilien (1984, 1986) found that the duration of the NPD process was negatively related to new product performance. Finally, several authors have shown that new product performance is positively related to the extent that customers perceive the new product as different from existing products. This perceived difference may refer to, for example, new usage possibilities, a higher quality or cost advantages (see, for instance, Biggadike, 1979; Green, Barclay and Ryans, 1995; Lambkin, 1988, 1992).

Market strategy aspects identified through the literature and interview process include the targeting strategy (Biggadike, 1979; Lambkin, 1988, 1992; Robinson and Fornell, 1985), and characteristics of the target market selected such as the market growth rate (Biggadike, 1979; Gatignon, Weitz and Bansal, 1990; Green and Ryans, 1990; Lambkin, 1992; Ryans, 1988; Yoon and Lilien, 1985), stage of the product life cycle (Biggadike, 1979; Ryans, 1988; Yoon and Lilien, 1985) and market competitiveness (Biggadike, 1979, Choffray and Lilien, 1984, 1986; Green, Barclay and Ryans, 1995; Green and Ryans, 1990; Lambkin, 1992; Ryans, 1988).

Market strategy aspects have also been found to impact new product performance (see Table 2.2). For example, Biggadike (1979) and Lambkin (1988, 1992) have shown that narrow targeting strategies are unlikely to be successful. In addition, several authors have shown that market potential and competitiveness aspects impact new product performance. For example, new product performance is likely to be higher when the product life cycle is in an early stage (Biggadike, 1979; Ryans, 1988; Yoon and Lilien, 1985), when the market growth rate is high (Biggadike, 1979; Gatignon, Weitz and Bansal, 1990; Ryans, 1988), and when the degree of competitiveness in the market is low (Choffray and Lilien, 1986; Green, Barclay and Ryans, 1995; Lambkin, 1988, 1992; Robinson and Fornell, 1985).

Firm strategy aspects which impinge upon launch strategies include the timing strategy (Biggadike, 1979; Green and Ryans, 1990; Lambkin, 1988, 1992; Robinson and Fornell, 1985; Urban et al., 1993), the NPD driver, that is whether NPD is market- or technology-driven or a combination of the two (Choffray and Lilien, 1984, 1986), and the objectives for the new product's launch (Choffray and Lilien, 1984; Yoon and Lilien, 1985).

The timing strategy is related to the order of entry issue. This order of entry issue is a debate in its own right, with opposing views on the advantages of being 'first-mover' (Golder and Tellis, 1993). Most empirical studies have shown that early timing and new product performance are positively related (Lambkin, 1988, 1992; Robinson and Fornell, 1985; Urban et al., 1986). The advantages thought to accrue to pioneers and early entrants include the acquisition of market knowledge (Stigler, 1981), the freedom to charge a premium price until competitive products are launched (Dumaine, 1989; Rosenau, 1990; Smith and Reinersten, 1991), the ability to create greater barriers to entry for potential competitive offerings (Bain, 1956; Biggadike,

1979; Porter, 1980), an opportunity to set product standards and limit access to distribution (Schnaars, 1986), and enhanced market image due to being a technological leader.

Choffray and Lilien (1984, 1986) found that new product performance was likely to be higher when the new product was market-driven and not technology-driven. In addition, Biggadike (1979) found that the overall poor performance of the new products in his sample were largely the result from a failure to set sufficiently aggressive objectives. Finally, Choffray and Lilien (1984) and Yoon and Lilien (1985) found that completely new products are more diversification- and less expansion-oriented than reformulated new products.

To summarize, the empirical evidence reviewed above suggests that strategic launch decisions impact new product performance. This evidence leads to the following hypothesis:

$H_{1A:}$ Successful and unsuccessful products differ with regard to the strategic launch decisions

As already recognized, the present research is rather exploratory in nature. Therefore, this hypothesis does not define explicitly which precise strategic launch decisions will differ between successful and unsuccessful products. However, previous research has suggested several differences. For example, it may be expected that new product success is more likely when the new product is relatively more innovative than competitors' products, NPD cycle time is short, timing is relatively early, and when the product is targeted at a fast growing, noncompetitive market in an early stage of the product life cycle. Hypothesis 1_A will be tested in Chapter Five.

3.1.2 Tactical launch decisions

Tactical launch decisions identified in the literature and through the interviewing process refer to the marketing mix decisions for a new product: product tactics, distribution (place), pricing and promotion. These four groups of decisions are also known as the four P's of the marketing mix.

Product tactics extend to the choice of the branding policy and the breadth of product assortment (see Table 3.1). Branding is more than mere product identification; it is equally related to issues governing the choice of product assortment. If the identification of the product is linked to the position of the product with respect to other products offered by the company, then the brand name is vital in communicating this relationship. In the case of a strong company identity, the brand name chosen may echo the company identity and image.

The impact of branding policies on new product performance has not been investigated in the specialist studies. However, several studies have highlighted the importance of the breadth of product assortment in attaining new product success (Biggadike, 1979; Hultink and Schoormans, 1995; Lambkin, 1988, 1992; Robinson and Fornell, 1985). Most authors suggest that the breadth of product assortment should be relatively broad in order to attain high levels of new product performance.

Distribution is crucial in the eventual acceptance and sales of a new product in the market as it governs the availability of the new product to customers (Moore and Pessemier, 1993). It goes without saying that the distribution channels chosen must reflect the target market's buying behavior and allow for the maximum availability to the target market. The distribution channels chosen may reinforce or dilute the intended message of the product's positioning in the marketplace.

Two distribution decisions have been investigated in relation with new product performance, the choice of distribution channels and distribution intensity. For example, Biggadike (1979) showed that both current and new distribution channels were needed to be successful. In addition, several authors have shown that distribution intensity (usually measured in terms of relative distribution expenditures) contributed positively to new product performance (Biggadike, 1979; Green, Barclay and Ryans, 1995; Green and Ryans, 1990; Lambkin, 1988, 1992; Choffray and Lilien, 1984, 1986; Gatignon, Weitz and Bansal, 1990, Yoon and Lilien, 1985).

Pricing a new product is an integral element in its appeal (or lack of appeal) to potential customers. The price reflects the product's competitive positioning and for customers it may be a measure of the product's quality and innovativeness. The specialist studies have investigated the impact of pricing strategy and relative price level on new product performance.

The pricing strategy for a new product extends to the choice between skimming (i.e., a policy of high initial prices that skim the cream of the market in order to recover investments early) and penetration (i.e., a relatively low price for penetrating markets early), which is by nature a choice with long-term objectives in mind (Kotler, 1994; Woodside, 1995). Kotler (1994) suggests that a penetration strategy is optimal when the market is highly price sensitive, production and distribution costs fall with accumulated production experience, and when a low price discourages actual and potential competition. In contrast, a skimming strategy is more appropriate when a sufficient number of buyers have a high current demand, a high price does not attract more competitors, and when a high price supports the image of a superior product.

Until recently, a skimming strategy was advised as the most profitable route, especially for products with a clear unique advantage and was thought to allow for greater recovery of development costs. In addition, the assumption was reinforced associating advantage with being first to

market, so a high price was tenable until the arrival of serious competition on the market. This said, the tendency toward shorter life cycles and decreasing time lags between first movers and early 'me-too' products has caused a rethink in pricing strategy for new products. Specifically, where a product's diffusion into the market is considered likely to follow the typical diffusion curve (see section 2.5), there is an argument for employing penetration pricing to hinder competitive product launches and to benefit from increasing economies of scale as volume sales of the products increase along with diffusion (Choffray and Lilien, 1984). This view requires a longer term perspective of the recovery of development costs.

Hultink and Schoormans (1995) found that skimming and penetration pricing strategies can both be successful. However, the choice between both pricing strategies should depend on the type of performance desired (i.e., sales or profit). According to them, penetration strategies are more appropriate when sales growth is the objective, while skimming strategies are more appropriate when profits are the objective. The impact of the relative price level on new product performance has been investigated repeatedly in the specialist studies (see, for instance, Biggadike, 1979; Green, Barclay and Ryans, 1995; Lambkin, 1988, 1992; Choffray and Lilien, 1984, 1986). Most authors have shown that new product performance is likely to be higher when the relative price is lower.

Promotion decisions encompass the range of communication and motivation instruments needed to raise awareness and precipitate purchase of the new product (Calantone and Montoya-Weiss, 1993; Moore and Pessemier, 1993). These decisions include relative promotion expenditures as well as the choice of marketing communications instruments.

Promotion expenditures have been shown to impact the performance of new product introductions (see, for instance, Biggadike, 1979; Lambkin, 1988; Yoon and Lilien, 1985), which is unsurprising, given its role in positioning the product and creating awareness, interest and trial (Wind, 1982). Surprisingly, there is a comparative lack of attention given to the choice of marketing communications instruments in the literature, although it is particularly important to managers in new product launches (Wind, 1982). Marketing communications instruments include those aimed at intermediaries (i.e., push promotion) such as discounts, training, and point of sale material, as well as those targeted at final customers (i.e., pull promotion). These instruments are introduced to increase stocking by the chosen distributors and trial by end users (Moore and Pessemier, 1993). Green, Barclay and Ryans (1995) showed that the level of print advertising impacts new product performance whereas Choffray and Lilien (1984) found that salesforce promotion was important in attaining new product success.

The empirical evidence reviewed above suggest that tactical launch decisions impact new product performance. This evidence leads to the following hypothesis:

H_{1B}:   Successful and unsuccessful products differ with regard to the tactical launch decisions

Although this hypothesis does not define explicitly which tactical launch decisions will differ, previous research has suggested that new product success is more likely when the breadth of product assortment is relatively broader, distribution and promotion expenditures are relatively higher, and when the price level is relatively lower. Hypothesis 1_B will also be tested in Chapter Five.

3.1.3 Associations between the strategic and tactical launch decisions

Although several authors have acknowledged that strategic and tactical launch decisions should be related to construct an internally consistent launch strategy (Biggadike, 1979; Choffray and Lilien, 1986; Green and Ryans, 1990), it has been the subject of little empirical investigation. The main problem is that investigating the interrelationships between the two groups of launch decisions is difficult because of the interactions within and between the two sets of launch variables. For example, Biggadike (1979, p.25) argues that:

"... the methodological problem arises from the interactions among the variables. Marketing theory stresses that satisfactory performance comes from an internally consistent mix. Yet, to handle the relationships among so many variables, with the effectiveness of each depending on the levels of the others, is an extremely complex task. This methodological problem can be tackled by two different research approaches. One is to focus on each strategy dimension individually, a simple approach. Alternatively, interactions among the various strategy dimensions can be recognized and attempts made to identify internally consistent strategies, a more difficult approach."

Although difficult, marketing theory and empirical results show that investigating the interrelationships among launch decisions is valuable (Biggadike, 1979; Green and Ryans, 1990; Hultink et al., 1997; Kotler, 1994; Lambkin, 1988, 1992; Yoon and Lilien, 1985). For example, the diffusion literature and product life cycle (PLC) theory provide normative advice on how tactical launch decisions should differ according to the stage of the product life cycle (see, for instance, Brown, 1992; Cox, 1967; Day, 1981; Goldman, 1982; Kotler, 1965; Levitt, 1969; Onkvisit and Shaw, 1986; Swan and Rink, 1982).

In addition, following a skimming pricing strategy is more likely to be successful when the new product is completely new, more innovative and first to market than when the new product is less innovative and 'me-too' (Kotler, 1994). Abell (1975) suggested that whether to use a skimming or penetration pricing strategy is also a choice about how broad or narrow the

targeting strategy should be. According to Abell (1975), skimming strategies are more appropriate when the scale of market entry is small whereas penetration strategies are preferable when the scale of market entry is broad. Similarly, if the objective of the new product is to raise barriers for the competition, a launch strategy of low prices, high promotional expenditures and intensive distribution is more likely to achieve positive results than a skimming pricing strategy with low promotional expenditures and a selective distribution strategy.

Further, a product may benefit from intensive distribution if it is intended for mass markets, whereas selective distribution may be more appropriate for products being aimed at differentiated or niche segments, respectively. In this respect, Lambkin (1988) reports that pioneering companies targeting many customers also display higher levels of distribution expenditures.

The breadth of product assortment probably depends on the strategic nature of the development, namely whether it is an addition to an existing line of products or a completely new line (or range) of products. In addition, the breadth of assortment is likely to be related to the breadth of the target segments served and the desired position of the company in the particular product-market. For example, Biggadike (1979) found that new entrants generally launch fewer products into a product-market than the incumbent players, but also that the breadth of the product line was positively related to the number of customers being targeted.

Lambkin (1988) found that pioneering firms offered a broader product line and achieved higher market shares and long-term profit advantages over their rivals. Finally, Schnaars (1994) suggests that an imitation instead of a pioneering strategy may be successful as long as the other launch decisions are appropriate. He provides three successful imitation strategies: lower prices, imitate-and-improve, and market power. For example, Canon and Nikon surpassed Leica in the 35 mm camera market with improved products and lower prices.

To summarize, marketing theory and empirical findings provided in the literature suggest the relevance of investigating the interrelationships among the strategic and tactical launch decisions that reinforce each other to jointly drive new product performance. Until now, research has not established which tactical launch decisions are appropriate, given the strategic agenda which can be shown to lead to increased success. The present study builds on previous research and integrates the findings into its conceptual basis to address the issues highlighted above. The interrelationships between the strategic and tactical launch decisions will be examined to build an empirically-based, integrated view of new product launch strategies.

The discussion above suggests that strategic launch decisions made early in the NPD process influence how tactical launch decisions are made later, closer to commercialization. In addition, new product performance is likely to be higher when the tactical launch decisions are

related to the strategic aspects of the new product's launch. This line of reasoning leads to the following two hypotheses (which will be tested in Chapter Six):

H_{2A}:   Strategic launch decisions are related to the tactical launch decisions

H_{2B}:   The joint sets of interrelated strategic and tactical launch decisions impact new product performance.

3.1.4   Differences in launch decisions between consumer and industrial products

The specialist studies in Tables 2.2 and 3.1 studied launch strategies for consumer products or for industrial products. None of these studies has investigated differences in strategic and tactical launch decisions between both product types. This is surprising, given the fact that the marketing and NPD literatures suggest that several differences between consumer and industrial products exist.

For example, Day and Herbig (1990) argued that, in contrast to the buying process for a consumer product, the buying process for an industrial product generally involves a multiparty decision-making unit, larger funds and a longer-term commitment to the new product. Hultink and Robben (1995a) suggest that industrial customers usually have more expertise and buy more rationally than consumers. Webster (1991) adds that industrial products tend to be more complex than consumer products, and further, that buyers and sellers in industrial markets are more interdependent than in consumer markets. In addition, Webster (1991) argues that the buying process for an industrial product usually lasts longer and tends to be more complex than for a consumer product. Finally, Van Drunen (1996) suggests that the number of potential customers is usually smaller in industrial markets than in consumer markets, and further, that reciprocity and long term relationships between sellers and buyers are more common in industrial markets than in consumer markets.

Many of the proposed differences between consumer and industrial products refer to the buying process. Although these differences in the buying process may be reflected in the launch strategy for new products, differences in launch strategy decisions between consumer and industrial products have not been investigated empirically. However, several authors have suggested that differences in launch decisions exist. For example, Van Drunen (1996) mentions that personal selling is more important, and advertising and promotion are less important in industrial markets than in consumer markets. Thorelli and Burnett (1981) found that product life cycles for industrial products were longer than for consumer products. These longer life cycles may impact the appropriateness of different pricing strategies over the product life cycle. Finally, Kotler et al. (1996) argue that several industrial markets have inelastic demand which means that total

demand for many industrial products is not affected much by price changes. In addition, they mention that business markets are more geographically concentrated which might facilitate niche targeting strategies.

The available literature suggests that industrial product launches differ from consumer product launches with respect to the product strategy (i.e., industrial products tend to be newer and more innovative), market strategy (i.e., industrial products are more often launched with a niche targeting strategy), firm strategy (i.e., industrial products are more often technology-driven), pricing (i.e., price level is less important for industrial products), and promotion (i.e., promotion expenditures are more important for consumer products).

On the other hand, given the limited amount of empirical research available, there are no a priori reasons to expect that the signs of the relationships among the strategic and tactical launch decisions differ between consumer and industrial products. For example, it may be expected that the relationship between timing and pricing strategy will be the same for consumer and industrial new products alike. For instance, for both groups of new products, skimming pricing strategies are probably more appropriate when the new product is first-to-market.

This line of reasoning leads to the following three hypotheses (which will be tested in Chapter Seven):

H_{3A}:   Consumer and industrial products differ with regard to the strategic launch decisions

H_{3B}:   Consumer and industrial products differ with regard to the tactical launch decisions

H_{3C}:   The interrelationships between the strategic and tactical launch decisions are independent of product type (consumer or industrial).

3.1.5 Differences in launch decisions among countries of introduction

Most generalist studies investigating the correlates or determinants of NPD performance have been conducted in Canada and in the U.S.A.. Only a few empirical studies collected data in Europe. For example, Bronnenberg and Van Engelen (1988) tested Cooper's (1992) NewProd system in The Netherlands, and Vanden Abeele and Christiaens (1986) investigated Belgian firms. Both studies are generalist studies. The data for the specialist studies presented in Tables 2.2 and 3.1 have primarily been collected in France and in the U.S.A..

Because management principles, standards and styles differ around the world, appropriate actions from and links among strategic and tactical launch decisions associated with new product launches may differ depending upon the geographic source of data. Unfortunately, specialist

studies on the effectiveness of launch strategies have not addressed intercountry differences at all.

However, some generalist studies have started to investigate intercountry differences. For example, Clark and Fujimoto (1991) and Womack, Jones and Roos (1990) showed how Japanese, American and European firms differ when developing new cars. For instance, Clark and Fujimoto (1991) found that the costs of building a working prototype were higher for European than for Japanese firms. Edgett et al. (1992) compared Japanese and British-owned firms operating in the U.K. and explored their perceptions of new product success and failure. They found that British firms were more reactive to the marketplace than the Japanese who were more proactive in seeking new markets. In addition, the Japanese firms placed more emphasis on meeting consumers' needs with good quality and reliable products at competitive prices. Further, Gupta, Brockhoff and Weisenfeld (1992) investigated how American and German managers make tradeoffs among product performance, NPD cycle time and development costs when developing new products. They found that U.S. managers do not emphasize speed to market to the same extent as German managers do. Finally, Greenley and Bayus (1994) provided a comparative study of the approaches used to launch new products in U.K. and U.S. companies. Although this study comes close to being a specialist study, the authors provided insight into the information inputs, decision-making methods and managerial participation when launching new products, rather than into the strategic and tactical launch decisions made by managers.

On a more general level, several authors have investigated differences in country cultures[4] (see, for instance, Hofstede, 1980, 1983, 1992; Hofstede and Bond, 1984, 1988; Rokeach, 1969, 1973). For example, Hofstede (1980) derived four dimensions of national culture: power distance, individualism, masculinity versus femininity and uncertainty avoidance. The first three dimensions refer to (Hofstede, 1992) expected social behavior toward people higher or lower in rank (power distance), toward the group (individualism/collectivism), and according to one's gender (masculinity/femininity). Uncertainty avoidance indicates to what extent a culture programs its members to feel either comfortable or uncomfortable in unstructured situations (Hofstede, 1992). An additional dimension has been provided by Rokeach (1969, 1973) and by Hofstede and De Bond (1984, 1988): long-term orientation. Long-term orientation indicates whether people are oriented toward the future or toward the present and the past.

Comparing the three countries where the data for the present research project were collected (i.e., The Netherlands, the U.K. and the U.S.A.) on these five dimensions showed some

[4] Another research stream focuses on company cultures. For example, Vink (1986) investigated the impact of company cultures on marketing decision making by analyzing three major corporations in The Netherlands. Because the present research project is mainly interested in the impact of country cultures on launch strategies, research on company cultures will not be summarized here.

interesting differences and similarities. For example, the three countries received similar ratings on power distance and individualism. Apparently, the expected social behavior toward people higher or lower in rank or toward the group appears to be similar in the three countries. However, the U.K. and the U.S.A. are masculine countries whereas The Netherlands are a feminine country. In addition, people in The Netherlands feel more comfortable in unstructured situations and are more oriented toward the future than people in the U.K. or in the U.S.A..

Some authors have discussed implications of these cultural differences for marketing strategies (see, for instance, Cateora, 1996; Keegan, 1989; Kotler et al., 1996; Usunier, 1993; Wind, Douglas and Perlmutter, 1973). The main question in this literature on international marketing is whether products produced and marketed domestically should be adapted for foreign markets (Cateora, 1996; Usunier, 1993). Unfortunately, this literature provides no insight into how new products should be launched in different countries with regard to the strategic and tactical launch decisions.

Although no empirical research is available, the literature suggests that launch strategies should differ among countries of introduction to reflect differences in country culture, size and economic conditions. However, like above, there are no a priori reasons to expect that the signs of the relationships between the strategic and tactical launch decisions differ among countries of introduction. Therefore, the following three hypotheses were formulated (which will be tested in Chapter Eight):

H_{4A}: Strategic launch decisions differ among countries of introduction

H_{4B}: Tactical launch decisions differ among countries of introduction

H_{4C}: The interrelationships between the strategic and tactical launch decisions are independent of the country of introduction.

3.2 Operationalization of the independent variables in the model

The literature review and interviews that were discussed in section 3.1 derived a broad list of launch variables (see Table 3.1). To provide a thorough understanding of launch strategies, it was decided to include all variables listed in Table 3.1 in the present study. This choice is consistent with De Jonge and Oppedijk van Veen's (1982) suggestion that variables should be selected only when there is some empirical evidence regarding the potential relevance of the selected variables to impact the dependent variable of interest. The next step in the research was to operationalize the strategic and tactical launch variables (Verschuren, 1988).

Three aspects guided the operationalization procedure. First, to get a more complete picture of the launch decisions that managers actually make, categoric responses were chosen rather than continuous scale responses. For the present research project, it was more helpful to know that a 'skimming strategy' was followed rather than whether the pricing strategy received a '3' on a 7-point Likert-type rating scale. The interviews indicated that managers actually make launch decisions categorically, and further, pretests showed that managers had no difficulties providing categoric rather than continuous scale responses. In addition, the possibility of systematic biases in attributions was avoided as much as possible. Given that respondents were asked to provide information about new product performance, it was important to avoid leading respondents into selecting those response categories that might justify the new product performance achieved (Curren, Folkes and Steckel, 1992; Mahajan, 1992; Weiner, 1986). Therefore, where possible, the answer categories were defined in such a way that there were no a priori reasons to select one answer category over the others provided. Finally, wherever possible, the present study used operationalizations provided by previously published studies to allow for maximum comparability of the findings from the present project with the results from those previous research efforts. An overview of the measures used to describe the strategic and tactical launch variables is presented below.

3.2.1 Operationalization of the strategic launch decisions

The strategic launch variables consist of three components, namely the project's product strategy, market strategy and firm strategy. The project's product strategy was measured with four variables (i.e., relative product innovativeness, NPD cycle time, product newness and perception of customers), market strategy also with four variables (i.e., targeting strategy, market growth rate, stage of the product life cycle and market competitiveness) and firm strategy with three variables (i.e., timing strategy, NPD driver and new product objectives). Table 3.2 shows the strategic launch variables included in the study and the response categories for each variable. These categories and variables arose out of a combination of organizing the variables studied in the previous specialist studies and the interviews.

   Relative product innovativeness measured the innovativeness of the product in comparison with competing products on the market (i.e., whether the new product was more, equally or less innovative than competing products; cf. Biggadike, 1979). *NPD cycle time* measured the time lapsed between ideation and launch of the new product (cf. Griffin, 1997). This variable indicated the swiftness of the product's development. The categories for NPD cycle time were: less than six months, within six months and a year, within one and three years, and more than three years. The *product newness* variable assessed how new the product was for the

Table 3.2: Operationalization of the strategic launch decisions

Variables			Response categories			
	(1)	(2)	(3)	(4)	(5)	(6)
Product strategy						
Product innovativeness	more	equal	less			
NPD cycle time	< 6 months	6 months - 1 year	1-3 years	> 3 years		
Product newness	completely new	new product line	addition to line	improvement	repositioning	low cost
Perception customers	incremental improvement	major improvement	never seen before			
Market strategy						
Targeting strategy	niche	selective	mass-market			
Market growth rate	less than 0%	0% - 5%	5% - 10%	more than 10%		
Stage of the PLC	introduction	growth	maturity	decline		
Market competitivenes	0	1-to-3	4 or more			
Firm strategy						
Timing strategy	technological innovator	fast follower	cost reducer			
Driver of NPD	completely market	mainly market	mix	mainly technology	completely technology	
Objectives						
- Expand product range	no	yes				
- Barriers for competition	no	yes				
- Increase market penetration	no	yes				
- Utilize excess capacity	no	yes				
- Produce at lower costs	no	yes				
- Capitalize on new technology	no	yes				
- Establish foothold in market	no	yes				
- Capitalize on existing market	no	yes				
- Offset seasonal cycle	no	yes				
- Increase company's image	no	yes				
- Preempt emerging segment	no	yes				

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market and for the firm. Because of its general acceptance in the NPD field, the present study used the product newness categorization provided by Booz, Allen and Hamilton (1982). They distinguished six categories of product newness based on the technical and market uncertainties of the project: completely new products for new markets, new product lines, additions to existing lines, improvements of existing products, repositionings and existing products produced at lower costs. Finally, respondents assessed the *perception of customers of the new product* by indicating whether the new product was an incremental improvement without new usage possibilities, a performance improvement with new usage possibilities or a product they had never seen before.

Market strategy aspects were described in terms of four variables. The present project distinguished three *targeting strategies*: mass-market, selective and niche (cf. Crawford, 1994; Kotler et al., 1996). A 'mass-market' strategy attempts to sell the new product to everyone, a 'selective' targeting strategy involves making one product for each customer group and sell them as a line, and a 'niche' targeting strategy focuses on only one segment and go all out for that one (Crawford, 1994). The answer categories for the *growth rate of the market* in which the new products were introduced were less than 0% (negative growth), 0%-5%, 6%-10%, and more than 10%. The *stage of the product life cycle* was either the introduction, growth, maturity or decline stage (cf. Biggadike, 1979; Kotler et al., 1996). Finally, *market competitiveness* was captured by asking respondents to provide the number of competitors on the market, excluding the company the respondent worked for, when the new product was introduced: none, one to three, or four or more (cf. Biggadike, 1979; Lambkin, 1988, 1992).

The present research project distinguished three *timing strategies*: technological innovator, fast follower, or cost reducer (cf. Lambkin, 1988, 1992). A technological innovator is the first company to launch a new product and is often the first to develop a new technology necessary for the product's performance. A fast follower is an early entrant in a growing and changing market. A cost reducer is a late entrant that enters the market when the speed of market changes slows down. The *NPD driver* was assessed with the following five categories: completely market driven, mainly market driven, a mix of market and technology, mainly technology driven and completely technology driven (cf. Griffin and Page, 1993, 1996). Finally, the present study included eleven *new product objectives* suggested by Mahajan and Wind (1992). From this set of eleven objectives, respondents chose those that applied to the new product launch. The eleven objectives included in the present research project were: expanding the product range, putting up barriers for competition, increasing market penetration, utilizing excess capacity, producing existing products at lower costs, capitalizing on a new technology, establishing a foothold in a new market, capitalizing on an existing market, offsetting a seasonal cycle, increasing the company's image and preempting an emerging market segment. In contrast

to the other strategic launch variables, the categories for the objectives were not mutually exclusive. Therefore, respondents could choose as many objectives for each new product as applied.

3.2.2 Operationalization of the tactical launch decisions

The tactical launch decisions relate to the four basic elements of the marketing mix: product tactics, distribution, pricing and promotion. Table 3.3 shows the tactical launch variables included in the study and the response categories for each variable.

Table 3.3: Operationalization of the tactical launch decisions

Variables	Response Categories			
	(1)	(2)	(3)	(4)
Product tactics				
Breadth of assortment	broader	equal	smaller	
Branding policy	new brand	brand extension	company name	no brand/generic
Distribution				
Distribution channels	current	new	both current/new	
Distribution expenditures	higher	equal	lower	
Pricing				
Pricing strategy	skimming	penetration	other	
Price level	higher	equal	lower	
Promotion				
Promotion expenditures	higher	equal	lower	
Communication instruments				
- trade promotion	no	yes		
- customer promotion	no	yes		
- salesforce promotion	no	yes		
- direct marketing	no	yes		
- tv-advertising	no	yes		
- radio-advertising	no	yes		
- print-advertising	no	yes		
- personal selling	no	yes		
- public relations	no	yes		
- trade shows	no	yes		

The first tactical launch variables related to the product tactics (i.e., breadth of product assortment and branding policy). The *breadth of product assortment* chosen for the launch was examined by asking respondents to indicate the breadth of the product range compared to competitors (i.e., broader, equally broad or smaller; cf. Biggadike, 1979; Lambkin, 1988, 1992).

Branding policies for the new product were investigated by asking respondents to identify whether a new brand name was developed, a brand name from another group was adopted, the company name was emphasized or whether the new product was a generic (i.e., a product with no brand name).

Distribution variables were examined along two dimensions. The *choice of distribution channels* was assessed by asking respondents whether they used current, newly developed, or a combination of both new and current channels for the new product (cf. Biggadike, 1979). *Relative distribution expenditures* examined the distribution expenditures for the new product in relation to competitive spending (i.e., higher, about the same or lower; cf. Lambkin, 1988, 1992).

Pricing variables included the pricing strategy and the relative price level. The *pricing strategy* was categorized as a skimming, penetration or an other strategy (cf. Dean, 1950; Kotler et al., 1996). Second, respondents classified the price level relative to competitive products (i.e., higher, equal or lower; cf. Biggadike, 1979; Lambkin, 1988, 1992).

Finally, promotion variables included the amount of investment in the promotional effort, measured in comparison to competitors and the choice of *marketing communications instruments* used to communicate the existence of the new product and to create interest and trial. *Relative promotion expenditures* were higher, about the same or lower than major competitors.' For the marketing communications variable respondents indicated whether trade promotion, customer promotion, salesforce promotion, direct marketing, tv-advertising, radio-advertising, print-advertising, personal selling, public relations or trade shows applied. These marketing communications instruments were taken from the relevant literature on marketing communications (see, for instance, Aaker, Batra and Myers, 1992; Jobber, 1995; Kotler et al., 1996). In contrast to the other tactical launch variables, the categories for the *marketing communications* instruments were not mutually exclusive. Therefore, respondents could choose as many instruments for each new product as applied.

3.3   Conclusion

Chapter Three built the conceptual model for investigating launch strategies and formulated ten hypotheses regarding the impact of particular sets of launch decisions on new product performance. A new product launch strategy was defined as consisting of strategic launch decisions that are made early in the NPD process and tactical launch decisions made closer to commercialization. Both sets of variables were hypothesized to impact new product performance. In addition, strategic launch decisions were expected to be related to the tactical launch decisions. The present project hypothesized that new product performance is likely to be

higher when the tactical launch decisions are related to the strategic aspects of the new product's launch. Further, differences in launch decisions between consumer and industrial products, and among countries of introduction, were discussed. The present study hypothesized that launch decisions will differ between both product types, and among the countries of introduction. Finally, the strategic and tactical launch variables were operationalized.

Before this project can proceed with testing the hypotheses formulated in this chapter, first the multidimensional concept of new product performance needs to be addressed. Therefore, Chapter Four will deal with the definition and operationalization of new product performance in detail. Subsequently, Chapters Five to Eight will test the ten hypotheses.

4. DEFINING AND MEASURING NEW PRODUCT PERFORMANCE[1]

In investigating the impact of strategic and tactical launch decisions on new product performance, researchers face a dual task: As well as having to study the critical launch decisions, they must also define new product performance (Hart and Craig, 1993). This is neither an easy nor a straightforward task because new product performance is a multidimensional concept. For example, Griffin and Page (1993, 1996) found that researchers and practitioners used a total of 75 different measures of new product performance. Hart (1993) found little consensus among the major research studies on how to define new product performance. She noted that much of the literature has skillfully sidestepped the issue of what the essence of new product performance is. To date, it is still a question which dimensions of performance one should include and how to measure these dimensions. This issue is a major problem because the way in which new product performance is defined and operationalized influences the findings that describe the factors contributing to new product performance (Hart, 1993). For example, the determinants of new product performance may be different when performance is operationalized as 'met market share goals' than when performance is operationalized as 'return-on-investment (ROI).'

Some researchers have started to study the dimensions of new product performance in the last decade (Cooper, 1984; Cooper and Kleinschmidt, 1987b; Griffin and Page, 1993, 1996; Hart, 1993, Hart and Craig, 1993). These studies will be reviewed below.

4.1 The literature on defining and measuring new product performance

The problem of how to define and measure new product performance is not a new one. A large body of literature exists that deals with the overall competitive performance and the diverse ways in which this construct can be measured (Baker and Hart, 1989; Bourgeois, 1980; Dess and Robinson, 1984; Hitt and Ireland, 1985; Venkatraman and Ramanujam, 1986).

For example, Venkatraman and Ramanujam (1986) developed a two-dimensional classification scheme that highlighted ten different approaches to the measurement of business performance. Their first dimension concerned the use of financial (e.g., profit and ROI) versus broader operational criteria (e.g., innovativeness, market standing and social responsibility), whereas the

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[1] This chapter is an adaption of Hultink, E.J. and H.S.J. Robben (1995a). Measuring new product success: The difference that time perspective makes. *Journal of Product Innovation Management,* 12: 392-405.

second dimension focused on two alternate data sources (primary versus secondary). Dess and Robinson (1984) examined the usefulness of subjective performance measures obtained from top management teams when problems are encountered in obtaining accurate performance data. They concluded that researchers might consider using a subjective perceptual measure when accurate objective measures are unavailable and the alternative is to remove the consideration of performance from the research design. This finding has been replicated by Pearce, Robbins and Robinson (1987).

Because new product performance is one aspect of a company's overall performance, much of what has been written on company performance is also relevant to new product performance measurement (Hart and Craig, 1993). For example, the distinction between financial and operational criteria (Venkatraman and Ramanujam, 1986) is also relevant in a new product setting. Some authors have dealt with new product performance measurement more explicitly. For example, Cooper (1984) and Cooper and Kleinschmidt (1987b) examined how new product performance can be measured, whether there were independent measures or different ways of looking at new product performance, and what the components of performance are when new product performance is viewed in different ways.

Cooper (1984) included eight performance measures that captured different facets of new product performance, such as the percentage of current company sales made up by new products introduced over the last five years, the extent to which the new product program met its performance objectives and the overall performance of the program. Factor analysis of these eight measures resulted in three independent dimensions of new product performance, namely the impact, which describes the impact or importance of the program on company sales and profits, the success rate of the program, which gauged the track record of the products the firm develops, and the relative performance, which captures the overall performance of the program relative to objectives, to competitors, and in terms of profits versus costs.

These findings were important for several reasons. First, some independent dimensions of new product performance were identified. In addition, a high (low) performance on one dimension did not necessarily mean a high (low) performance on the other two (Cooper, 1984). Finally, some strategy aspects contributed positively to one type of new product performance but negatively to a different type of performance. For example, a penetration pricing strategy may lead to a high market share but may be negatively related to the margin-to-sales ratio, especially in the short term. Cooper (1984) concluded that companies must first take a close look at the type of performance they desire and then select the most appropriate strategy.

Cooper and Kleinschmidt (1987b) elaborated on the previous study. Again it was found that new product performance is not a simple, unidimensional concept. Their research included ten performance measures. They identified three independent dimensions that characterize new

product performance, namely financial performance (e.g., relative profits to sales, profitability level and pay back period); opportunity window (the degree to which the new product opened new opportunities to the firm in terms of a new category of products and a new market area for the firm); and market impact (e.g., domestic and foreign market share). The conclusions were consistent with Cooper (1984). There seem to be three ways of looking at new product performance. This finding implies that there may also exist three sets of performance determinants.

Hart and Craig (1993) attempted to overcome the lack of consistency in defining new product performance in the existing literature by providing a framework. The framework has four building blocks: the measure of new product performance, the level of analysis, the source of data, and the data collection method. First, NPD studies have employed a variety of types of performance measures. Whereas some use financial measures of performance (e.g., profit and ROI), others use nonfinancial measures (e.g., design, social performance, and technology), and a third group uses a combination of the two. Secondly, NPD studies differ in the level at which performance is investigated. Some researchers focus on the program level whereas others look at the individual new product level. Finally, the data have been collected through different data collection methods (e.g., interviews, mail questionnaires) and with different data sources (e.g., self, expert, or peer-assessment).

Hart (1993) dealt with the relationships between direct and indirect financial measures at the company level and financial and nonfinancial measures at the new product level. The empirical results showed that indirect measures can be fruitfully applied in place of direct measures. This finding, which is consistent with Dess and Robinson (1984) and with Pearce et al. (1987), is especially important from a data access point of view. Respondents usually are more reluctant to provide direct financial data than providing indirect financial data. On the other hand, it was found that few significant associations existed among financial and nonfinancial measures of new product performance. This finding is counterintuitive because researchers and practitioners have at least implicitly assumed a positive relationship between financial and nonfinancial performance. Finally, Hart (1993) applied principal components analysis to eight statements describing successful outcomes of new product developments. This procedure resulted in three profiles of new product performance, namely one based on using a techno-logical race with competitors, one based on cost reduction and price competitiveness, and one based on ROI, by being first to market.

The use of different new product performance measures in the studies reviewed above makes it difficult to generalize results across investigations. Therefore, Griffin and Page (1993, 1996) attempted to identify all currently used measures of new product performance, and to organize them into categories that perform roughly the same function. For this purpose they drew together and compared the measures by which academics and companies evaluate new product

performance. Scrutinizing 77 articles (out of 61 different research projects) resulted in 46 different new product performance measures. Two additional surveys yielded 34 different performance measures in use, and respondents indicated that they would like to use 45 different measures. Thus, 75 different measures were collected. Expert grouping by a group consensus process and factor analysis both resulted in five general independent categories of new product performance measures, namely:

- Measures of firm benefits;
- Program-level measures;
- Measures of market acceptance;
- Measures of financial performance; and
- Measures of product performance.

These five categories measure different aspects of new product performance. Whereas the first two categories measure performance at the firm and program level, the last three categories measure new product performance at the individual new product level. For example, market acceptance measures reflect current market position, sales levels and sales performance compared with competitors. Measuring the financial performance of a new product provides information on the product's profitability. Finally, measures of product performance show how customers evaluate the product's quality and performance.

Neither practitioners nor academics used just a single measure of new product performance. In addition, academics measured different aspects of new product performance than practitioners do. Practitioners were more interested in individual new product performance, whereas academics have focused on the overall performance of NPD programs and their impact at the firm level. A comparison of the measures academics used with the measures practitioners used or would like to use resulted in 16 core measures, i.e., measures members of both groups use or want to use. Whereas a single measure referred to new product performance at the firm level (i.e., the percentage of current company's sales generated by new products introduced in the last five years), 15 measures referred to new product performance at the individual new product level. Because the present research project will investigate the impact of strategic and tactical launch decisions on new product performance at the individual new product level, those 15 measures are most relevant for the present study.

Table 4.1 depicts the 15 core project-level measures of new product performance provided by Griffin and Page (1993, 1996). This table shows that the market acceptance of a new product can be assessed with six measures, financial performance with four measures and product performance with five measures. Griffin and Page (1993) suggested that companies should

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regularly measure two market acceptance measures and one measure from each of the other categories to get a complete picture of a new product's performance. They further concluded that both academics and practitioners indicate that measuring new product performance requires a multidimensional conceptualization. Finally, they mentioned that at this point there is only partial consensus on the most useful combinations of new product performance measures.

Table 4.1: The 15 core project-level measures of new product performance

Market acceptance	*Financial performance*	*Product performance*
meeting revenue goals	attain profitability goals	product performance level
meeting revenue growth goals	break-even time	meeting quality guidelines
meeting unit sales goals	meeting ROI/IRR goals	launched on time
customer acceptance	attaining margin goals	development costs budget
customer satisfaction		speed to market
meeting market share goals		

Source: Griffin and Page (1993, 1996)

As described earlier, some researchers have attempted to arrive at a set of new product performance measures that can unequivocally be used in future research on and in practice of NPD. Although some measures and dimensions of new product performance have been identified, a gap still exists: Firm and product characteristics have not been considered to a sufficient degree. Therefore, it is unknown whether all firms should use the same new product performance measures. Previous studies treated their sample of respondents as coming from the same company, competing in the same industry with the same products and the same strategy. This assumption is unrealistic. For the present project, it is necessary to know, for example, whether manufacturers of consumer goods use different measures of new product performance than industrial goods manufacturers. Therefore, an empirical study was set up to investigate whether the importance attached to the new product performance measures depends on firm and product characteristics.

4.2 An empirically based selection of the dependent variables

The empirical study reported here measured the importance managers attach to the 15 project-level measures of new product performance (Griffin and Page, 1993). However, measuring the importance of new product performance measures is less valuable when no time perspective is

specified (Hultink and Robben, 1995a, 1996) because some performance measures are important to measure shortly after launch (i.e., in the short term) whereas others are more important to measure in the long term (Yoon and Lilien, 1985).

For example, it may be expected that return on investment (ROI) is only important to measure in the long term because it usually takes several years to recover the development and launch costs. For instance, Biggadike (1979) found that the sample of firms in his study achieved a median ROI of -78% after two years. This negative number was mainly due to high initial R&D and marketing expenses. Time helped, however; new product financial performance improved with time mainly because of decreasing R&D expenditures.

On the other hand, it may be argued that speed-to-market and development costs are especially important to measure in the short term. One reason for this is that marketing expenditures (e.g., promotion and distribution) become more important when the new product is firmly entrenched in the product life cycle instead of product development costs that are incurred much earlier. Yoon and Lilien (1985) provided an empirical example of the distinction between short term and long term new product performance. Short term performance was assessed by measuring first-year sales and market share. Long term performance included ROI and whether the new product grew into a product group.

In investigating the impact of strategic and tactical launch decisions on new product performance, it is important to include measures of new product performance that are considered important to measure in the short term, and measures that are important to measure in the long term. For example, Hayes and Abernathy (1980) criticize the focus of attention of many American managers on short term measures instead of on long term goals. Also, Aaker (1988) recommends developing performance indicators that will reflect long term performance. Finally, Hart and Craig (1993) mention that it is advisable to include measures that can also indicate how the product will perform in the future, and not just in the present.

Ideally, both long term and short term performance measures should be considered, but some measures are probably more important to measure in the short term whereas others are more appropriate for measurement in the long term. Without specifying the time perspective in the present empirical study, some measures might receive only moderate importance ratings because these measures may be unimportant to measure shortly after launch but they may be very important to measure in the long term. Based on these moderate importance ratings, it may be decided not to include these measures in a study that investigates the impact of launch decisions on new product performance. Therefore, respondents indicated the importance of the 15 project-level performance measures in the short term as well as in the long term.

4.2.1 The impact of firm and product characteristics

The importance managers attach to the different measures of new product performance may depend on firm and product characteristics. For example, it may be hypothesized that some new product performance measures are more important in a consumer market and others in an industrial market. Given that industrial customers usually have more expertise, buy more rationally, and use the products in further manufacturing processes (see section 3.1.4), it is possible that the performance measure 'product performance level' is considered more important in industrial than in consumer markets. In addition, it is possible that measuring 'speed-to-market' is more important for technological innovators whereas measuring 'development costs' is more important for cost reducers. Finally, because the introduction stage of the product life cycle usually lasts longer for products that customers have never seen before than for incremental improvements (Hisrich and Peters, 1991), it is possible that measuring 'revenue growth' and 'unit sales goals' is more important for firms launching incremental improvements than for firms launching completely new products.

To investigate how background characteristics influence the importance of the new product performance measures, in the short term as well as in the long term, the present project included four background characteristics: the type of market served (i.e., consumer or industrial), the timing strategy (i.e., technological innovator, fast imitator or cost reducer), customer perceptions of the firm's new products (i.e., incremental improvement, performance improvement, products never seen before), and the driver of NPD (i.e., market, technology, or mix).

4.2.2 Procedure and respondents

The targeted sample consisted of 197 Dutch companies.[2] A questionnaire was sent to an individual in the company after having identified by phone who would be most suitable to complete the questionnaire.[3] Identification of respondents occurred after explaining the purpose of the investigation to the company's switchboard personnel, who then made suggestions. A minority of the addressees contacted the researchers to inform them of having passed the questionnaire on to a colleague whom they thought to be more knowledgeable on the subject matter. This procedure and an additional contact by telephone led to 92 usable questionnaires, a

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[2] Names, addresses and phone numbers of potential companies with more than 25 employees were randomly drawn from the *Bedrijven A.B.C.*, a major Dutch manufacturing directory. All participating companies had developed and introduced new products in The Netherlands within the last five years.

[3] Thanks are due to Hanna de Bruin and Dennis Stevens for their help in collecting the data.

response rate of 47%. Twenty-two companies or 11% indicated that they were not willing or able to complete the questionnaire, mainly because of reasons of secrecy. Table 4.2 contains the profile of the sample.

Table 4.2: Sample composition

	Percentage of sample		Percentage of sample
Function respondent		Timing strategy	
marketing	74	technological innovator	48
general management	12	fast imitator	42
R&D/development	11	cost reducer	8
finance	1		
Measures new product performance		Customer Perception	
yes	87	performance improvements	41
no	10	small improvements	30
do not know	3	new-to-the-world products	21
NPD driver		Main served market	
mixture	55	industrial	61
market-driven	34	consumer	38
technology-driven	11		

Note: Percentages may not sum up to 100% due to rounding errors or missing values.

4.2.3   Questionnaire

The questionnaire centered around the 15 project-level measures of new product performance suggested by Griffin and Page (1993). For each of the 15 performance measures identified in Table 4.1, respondents indicated on a 5-point scale how important they judged these measures to be in measuring new product performance, with a '1' indicating that the measure was very important, and a '5' that it was not important at all. They did so for the short term, which was defined as the time period representing 25% of the product's expected lifetime, and for the long term, defined as 75% of the product's expected lifetime. For instance, the short term period that should be considered for a product with an estimated life expectancy of 12 years should thus be 3 years; the corresponding time period for the long term estimates would then be 9 years.

At the end of the questionnaire, 75% (69) of the respondents indicated they wanted to be informed on the results of the investigation, and 80% (74) would not mind being contacted again.

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These findings suggest that the respondents in general had a positive attitude toward the investigation.

4.2.4 Results

The results section has been divided into two parts. First, the importances of the 15 new product performance measures in both time perspectives will be presented. Then, the impact of background characteristics on these importances will be discussed.

4.2.4.1 The importance of the new product performance measures

Table 4.3 contains the means of the ratings for each of the 15 performance indicators for both the short term and the long term. Only the responses of managers who indicated that their firm measured new product performance (N = 80) were included.

To judge the perceived importance ratings, only means of 2.0 or less were considered, indicating that the measure was thought to be 'important' or 'very important' on average on the 5-point scales employed. Five measures reached this cutoff point for the short term perspective, and 10 for the long term perspective. This finding highlights that more indicators are considered important for measuring long term new product performance than for short term new product performance. Perhaps this result indicates the difficulty of collecting or evaluating relevant information to assess a product's short term performance.

Inspection of Table 4.3 indicates that four measures were perceived to be important for both the short term and long term measurement of new product performance. These measures are:

- customer satisfaction
- customer acceptance
- whether quality guidelines were met; and
- product performance level.

This finding suggests that there are four core measures that are perceived to be important for both the long and short term perspectives. The first two measures refer to the market acceptance of a new product whereas the latter two measures refer to the product performance of a new product (Griffin and Page, 1993). Another conclusion in this respect is that for both the long and short terms, customer satisfaction was most important to measure. This finding supports the recent and ongoing interest in measuring customer satisfaction in the academic and practitioners' literatures.

Table 4.3: Importance of new product performance measures for short term and long term perspectives (N=80)

Measure	Short term	Long term
customer satisfaction	**1.5**	**1.4**
customer acceptance	**1.5**	**1.5**
met quality guidelines	**1.5**	**1.5**
product performance level	**1.8**	**1.9**
launched on time	**1.8**	3.1
speed-to-market	2.1	2.7
met revenue goals	2.3	**1.8**
met unit sales goals	2.4	**1.9**
met revenue growth goals	2.5	2.3
attain profitability goals	2.7	**1.4**
attain margin goals	2.7	**1.6**
IRR/ROI	2.7	**1.8**
met market share goals	2.7	**1.8**
break-even time	2.7	2.5
development costs	2.7	3.1

Notes: entries are means from a scale with '1' indicating that the measure is very important, and '5' indicating that a measure is not important. Entries in bold are ratings less than two indicating that the measures are important or very important to measure.

For the short term perspective, a unique measure in addition to the four 'basic' measures has been identified, namely 'launched on time.' This finding echoes the emphasis on shortening NPD cycle times (see, for instance, Griffin, 1993, 1997). Apparently, for the short term measurement of new product performance, an additional measure from Griffin and Page's (1993) 'product performance dimension' is considered important.

The managers in the sample identified an additional six measures for assessing new product performance in the long term. These were:

- attaining profitability goals
- attaining margin goals
- IRR/ROI
- meeting revenue goals
- meeting market share goals; and
- meeting unit sales goals.

The first three measures refer to the financial performance of a new product whereas the latter three measures refer to the market acceptance of a new product (Griffin and Page, 1993). These measures emphasize a long term rather than a short term perspective, and are therefore consistent with a long term outlook on new product performance.

To summarize, when measuring new product performance in the short and the long term, four basic measures are considered important in both time perspectives, with at least one additional unique measure for each time perspective.[4] The four basic measures of new product performance virtually depict the product in interaction with the user. It is here that the heart of new product performance lies. If you achieve customer acceptance and customer satisfaction, probably through delivering a product that meets or exceeds the company's quality guidelines and that performs well for the customer, there is a basis for short term and long term new product performance.

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[4]   T-tests for dependent samples investigated whether the short term ratings were significantly different from the long term ratings. For nine measures, significant differences emerged. In terms of Griffin and Page's categorization of new product performance measures, for the short term the measures were associated with 'product performance' (launched on time, speed-to-market and development costs). In the long term, the focus of measurement is on 'market acceptance' and 'financial performance' (revenue, market share, unit sales, profitability, margin and IRR/ROI). Apparently, the importance attached to these measures of new product performance depends on the time perspective taken.

4.2.4.2 The impact of background characteristics

To test the possible associations of firm and product characteristics with the importance that the respondents attach to the new product performance measures, the importance ratings within each background variable were contrasted.

Impact of main served market. Through t-tests it was checked if firms mainly serving a consumer market differed in the importance they attach to measuring each indicator as opposed to firms mainly serving an industrial market, for both the long term and the short term. The significant findings of this test are depicted in Figure 4.1.

1 = Very Important, 5 = Unimportant
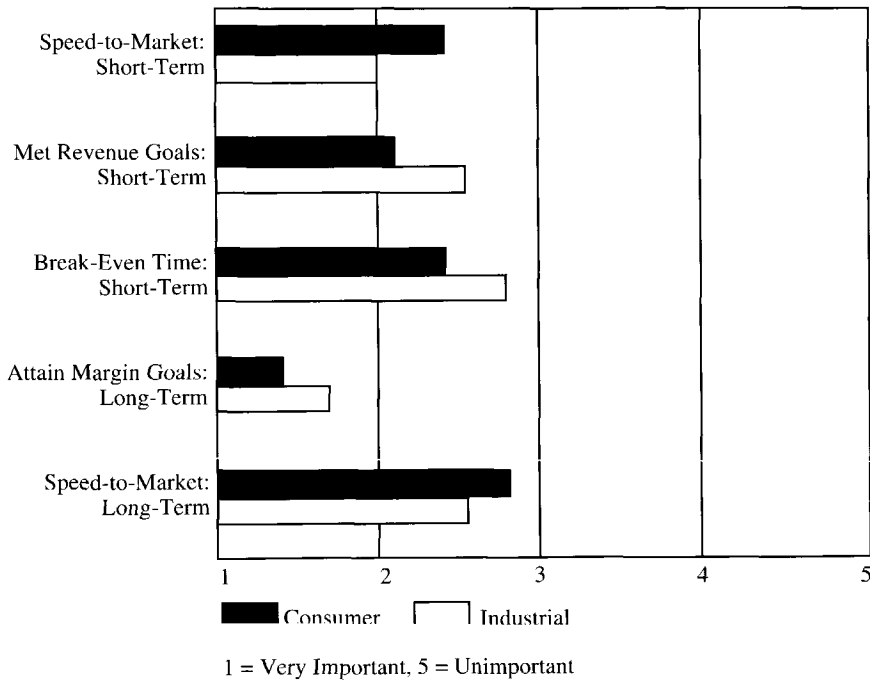
Figure 4.1: Impact of main market served

For the short term, a difference in the rated importances was found for measuring 'break-even time', with those serving consumer markets expressing more importance in measuring that indicator than those serving industrial markets ($p < .05$). In addition, firms serving consumer markets considered it more important to 'meet revenue goals' than firms serving industrial markets ($p < .10$). However, the means for both differences involved were larger than 2.0,

indicating that these indicators attracted only moderate importance ratings. One exception emerged: For firms mainly serving industrial markets, the 'speed-to-market' indicator became important to measure, in contrast to firms in the consumer market ($p < .10$). This finding suggests that apart from the five indicators that are always important to measure in the short term (see Table 4.3), managers in industrial markets may want to consider measuring 'speed-to-market' in the short term.

For the long term perspective, firms serving consumer markets on average found it significantly more important to measure whether 'margin goals' had been met than those serving industrial markets ($p < .05$). Firms serving industrial markets considered it more important to measure the 'speed-to-market' than firms serving consumer markets ($p < .10$), although both means involved were larger than 2.0.

It seems fair to conclude that in general there are only small differences between the average importance ratings of measuring each of the 15 new product performance indicators between firms mainly serving a consumer market and those mainly serving an industrial market. Focusing on the four basic indicators, it appeared that the means for firms serving consumer markets and industrial markets were almost identical. Focusing on significant differences for which one of the means was 2.0 or less showed that measuring 'speed to market' in the short term was only important for firms serving industrial markets. On average, however, consumer and industrial product firms largely attach the same importance to the new product performance indicators.

Impact of timing strategy. A similar analysis was conducted to test if the importance attached to the core measures of new product performance, in the short term as well as in the long term, depends on the timing strategy of the firm. The number of cost reducers in the sample was too small to be included in this analysis. For this reason, it was checked through t-tests if firms which described themselves as technological innovators differed in the importance they attach to measuring each indicator as opposed to firms which described themselves as fast imitators for both the long term and the short term. The significant differences are depicted in Figure 4.2.

Two statistically significant differences at $p < .05$ emerged; in both cases the technological innovators found it more important in the short term to measure 'met unit sales goals' ($p < .01$) and 'development cost' ($p < .05$) than fast imitators. In addition, technological innovators found it more important in the short term to measure 'met revenue goals' than the fast imitators. The latter difference approached statistical significance ($p < .10$). For all these significant or near-significant differences, however, the means involved were higher than 2.0, indicating that on average these indicators were not considered important although some came close. One exception emerged: Technological innovators found it important to measure 'meeting revenue goals'

in the short term, this in contrast to firms which described themselves as fast imitators ($p < .10$). This finding suggests that apart from the five measures that are always important to measure in the short term (see Table 4.3), technological innovators may want to consider measuring 'meeting revenue goals.'

1 = Very Important, 5 = Unimportant
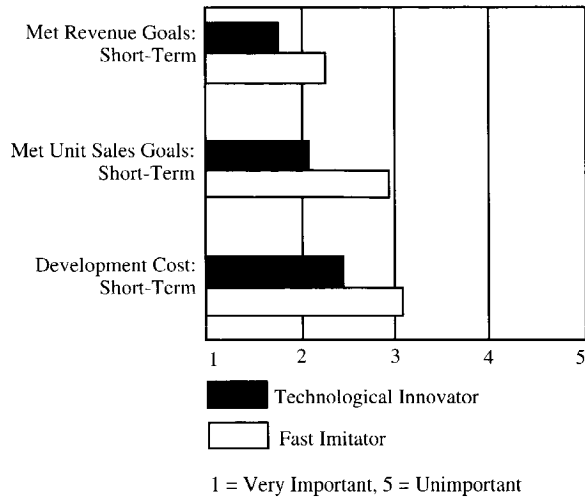
Figure 4.2: Impact of timing strategy

Overall however, it seems fair to conclude that in general there are only small differences between the average importance ratings of measuring each of the 15 new product performance indicators between technologically innovative firms and those that are fast imitators.

Impact of customer perceptions. An one-way analysis of variance was conducted to test if the importance attached to the measures of new product performance, in the short term as well as in the long term, depends on customer perceptions of the firm's new products. Customer perceptions (i.e., small improvements, performance improvements, new-to-the-world products) served as the independent variable. The significant differences are presented in Figure 4.3. The F-test was significant in only two cases, indicating an effect for measuring the 'met unit sales goals' indicator in the short term ($F = 5.13$, df $= 2, 65$; $p < .01$) and for measuring 'customer acceptance' in the long term ($F = 3.12$, df $= 2, 63$; $p < .05$). Employing the Scheffé procedure to assess differences between the means led to the identification of a single pair of means that was statistically different at $p < .05$; It was more important in the short term to measure 'met unit sales goals' for products that customers had never seen before than for performance improvements. Because the mean for the completely new products was smaller than two this finding

suggests that firms launching products that customers have never seen before may want to consider measuring 'meeting unit sales goals' in the short term in addition to the five measures that are always considered important to measure in the short term (see Table 4.3).

1 = Very Important, 5 = Unimportant
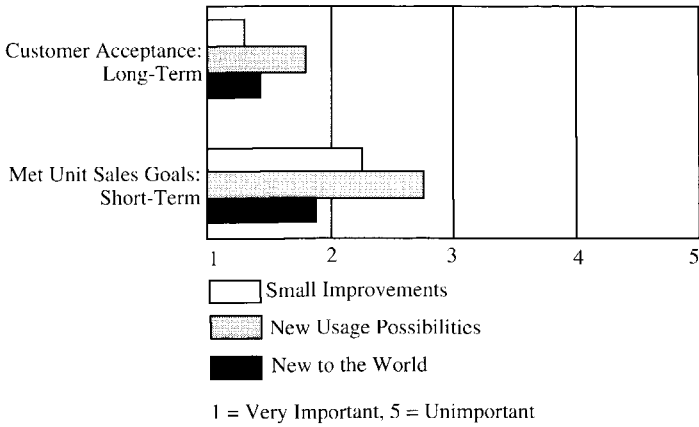
Figure 4.3: Impact of customer perceptions

On average however, the results depicted in Figure 4.3 suggest that in general there are only small differences among the average importance ratings of the 15 measures of new product performance for performance improvements, small improvements and products that customers have never seen before.

Impact of the NPD driver. To test if the importance attached to the measures of new product performance, for the short term as well as for the long term, would depend on the NPD driver, t-tests were conducted to evaluate the differences in mean importance ratings for the 15 performance measures between firms with a mainly market-driven NPD, and those, whose NPD driver can be characterized by a mix of market pull and technology push. The number of firms with a mainly technology-driven NPD process was considered too small to warrant an otherwise appropriate one-way analysis of variance to test the differences among the means of the three categories. Figure 4.4 contains the significant differences from these t-tests.

One significant difference at $p < .05$ emerged for the short term time perspective: firms employing a mix of market and technology drivers found it more important to measure the 'met unit sales goals' indicator than market-driven firms. The size of the means showed that this indicator was of moderate importance to measure. The difference in the importance of measuring 'met quality guidelines' came close to significance ($p < .10$), with the size of the means indicating that these indicators were considered important to be measured in the short term. Market-

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driven firms tended to perceive measuring 'meeting quality guidelines' as more important than firms with a mixed-driven NPD process.

1 = Very Important, 5 = Unimportant
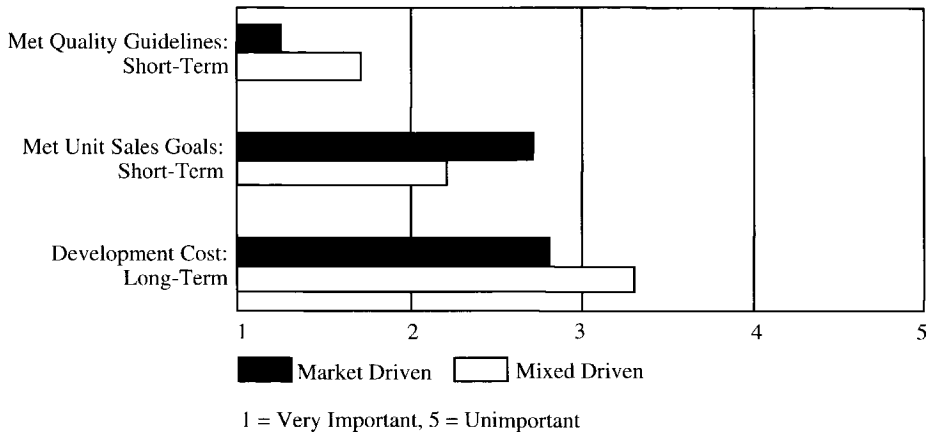
Figure 4.4: Impact of NPD driver

For the long term time perspective, one difference came close to significance ($p < .10$), with the means indicating that it was moderately important to measure 'development costs.' Firms with a market-driven NPD process found this measure more important than those whose NPD process was mixed-driven.

The results contained in Figure 4.4 suggest that on average, there are only small differences in importance ratings of the new product performance measures between firms with a mainly market-driven NPD process and those, who were driven by a mix of market and technology forces.

Summarizing, the importance attached to measuring the 15 indicators of new product performance differs only slightly given a long term or a short term time perspective for type of market served, the firm's timing strategy, customer perceptions of the firm's new products and for the NPD driver. Although some differences were statistically significant, and others came close to significance, there was no clear and identifiable pattern within these differences. Apparently, firms operating on different markets with different products, different timing strategies, and different NPD drivers do hardly differ in the importances they attached to the measures of new product performance, neither in the short term, nor in the long term. Focusing on the differences for which one of the means was 2.0 or less, showed that in the long term each subsample displayed the same pattern of results as depicted in Table 4.3. However, in the short term, five measures are always important to measure for each subsample but three subsamples may

want to consider an additional measure. Firms mainly serving industrial markets may want to consider measuring 'speed-to-market', technological innovators may want to consider measuring 'meeting revenue goals', and firms launching products customers have never seen before may want to consider measuring 'meeting unit sales goals' in the short term.

On average however, the findings suggest that the influence of the background characteristics on the importance that managers attach to measuring the 15 new product performance indicators is small. Analyzing these background characteristics did not yield any systematic evidence in the sense that there is no consistent set of statistically and conceptually significant differences.

4.3   Conclusions and implications

The most profound finding of the study was that it is less important what type of market the firm serves, what kind of timing strategy is followed, what the NPD driver is and how customers perceive the new products developed by the firm: *All firms largely attach the same importance to the new product performance measures.* The analyses suggest that background characteristics like type of market served, customer perceptions, timing strategy, and the firm's NPD driver do hardly influence the importance attached to the measures of new product performance, especially not in the long term. This finding should be taken to indicate that heterogeneity of samples concerning these variables need not bias the results. Therefore, in the succeeding chapters, the same new product performance measures will be used for firms that differ in terms of background characteristics.

5. SUCCESSFUL PRODUCTS, UNSUCCESSFUL PRODUCTS AND NEW PRODUCT LAUNCH DECISIONS[1]

To test if strategic and tactical launch decisions differ between successful and unsuccessful products (Hypotheses 1_A and 1_B), data on many successful and unsuccessful new products were collected. This chapter first describes the methods and data collection instruments. Then, the respondents approached to provide the data and the data collection procedure will be discussed. Finally, this chapter presents the analyses and results.

5.1 Method

The data needed for testing the ten hypotheses formulated in Chapter Three can be collected in various ways (for example, by personal interviews, telephone interviews, mail surveys, experimentation, and observation). Each method has its advantages and disadvantages (Babbie, 1992; Kanuk and Berenson, 1975; De Leeuw, 1990; Tull and Hawkins, 1987). Unfortunately, the relative merits of these methods are subject to conflicting opinions (De Jonge and Oppedijk van Veen, 1982). Therefore, a choice among these methods is usually made based on available budgets and time, required sample size, geographical scope of the research, validity and reliability issues, and the character of the investigation at hand.

For the present purposes, personal interviews, telephone interviews and experiments were ruled out because of the large number of strategic and tactical launch variables to be included in the research. In addition, using methods in which individuals are approached directly may evoke disturbing processes, such as ingratiation, self-presentational concerns, impression management and evaluation apprehension (Robben, 1991, p. 66-67). Observation of both the launch decisions made and the new product performance achieved would require a longitudinal design and significant participation of researchers (Hultink and Robben, 1995b). However, few companies allow academics access to their decision making and implementation meetings. In addition, when the national and global manufacturer Philips launches a new product, this would be easy to observe given Philips' substantial marketing communications efforts. But when national Dutch manufacturer BNS introduces a new hi-fi speaker, this would almost certainly go unnoticed. Only if the new system would attract substantial market share would marketing efforts

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[1] Parts of this chapter appeared in Hultink, E.J., A. Griffin, S. Hart and H.S.J. Robben (1997). Industrial new product launch strategies and product development performance. *Journal of Product Innovation Management*, forthcoming.

be clearly visible. Additional reasons why a longitudinal design was not chosen for the present research project were the international character of the project, the small size of the research team, and budget and time constraints.

Given that an important objective of the present study was to put previous findings to a test while simultaneously extending that research, the present methodology capitalized on the predominant method of data collection used in previous research on new product launch strategies. In the past, empirical studies have usually measured launch strategies and performance data by mail questionnaires (Montoya-Weiss and Calantone, 1994). Typically, researchers asked managers to pick successful and failed new products that their companies had launched some years ago (see, for instance, Cooper, 1979; Yoon and Lilien, 1985). Managers indicated which launch strategy their company followed for the new product, or rated the importance of selected launch decisions. Although this method, which relies on managerial hindsight, may have some drawbacks such as a failing memory (Golden, 1992) or sensitivity to attribution errors (Curren, Folkes and Steckel, 1992), it was chosen for the present research project. An additional reason for this choice was that investigating many introductions in several countries was unattainable with the other research methods.

Questionnaire development
A mail questionnaire was developed in the winter of 1993 and pretested for clarity and to ensure that the items represented the intended constructs. The questionnaire was originally developed in Dutch for data collection in The Netherlands and subsequently translated by a native speaker in English for data collection in the U.K. and the U.S.A.. The pretest consisted of three rounds. In the first round, six managers and six academics who were affiliated with the Delft University of Technology participated. They generally agreed that the questionnaire was too long for managers who are on a tight time schedule. A second set of eight managers who visited a conference at the Delft University of Technology on Multimedia developments was asked to complete the revised and shortened questionnaire. Several managers suggested that the phrasing of the questions was more suitable for a consumer than for an industrial environment. These and other suggestions were integrated and the discovered difficulties were solved in the next version of the research instrument. In the last round, six managers who were carefully selected to reflect the intended sample (for example, manufacturers of durable consumer products and manufacturers of industrial installation products) were interviewed after they had completed the questionnaire. The interviews indicated that the meanings of the questions and answer categories were clear and that the survey could be completed without difficulties. Appendix 5A depicts the U.S. questionnaire.

This questionnaire was used to collect launch decision and performance data about both successful and unsuccessful products that had been launched into the market within the last five years (since 1989). In addition, the survey collected background and demographic data on the respondent and the firm. Respondents provided two sets of launch strategy decisions and performance data in the survey. One set of decisions was provided for a product that the respondent designated as 'successful.' The second set of decisions were to be provided for an 'unsuccessful' product. Respondents rated the performance of each product on 15 indicators of new product performance, including items representing market acceptance, financial performance, and product performance (see Chapter Four). A 1 ('did not meet the criteria at all') to 7 ('met criteria completely') Likert-type scale was used in rating the projects. The 15 performance indicators were measured relative to objectives instead of in absolute numbers because respondents are usually more reluctant to provide direct performance data than providing indirect performance data. In addition, comparing new product performance across products is more appropriate with relative performance ratings than with absolute numbers. Fortunately, several researchers have found that indirect measures can be fruitfully applied in place of direct measures (Dess and Robinson, 1984; Hart, 1993; Pearce, Robbins and Robinson, 1987).

5.2 Respondents

The data were collected in three countries (The Netherlands, the U.K. and the U.S.A.). The data collection started in The Netherlands in the spring and early summer of 1994. Managers in the U.S.A. were approached in the late summer and autumn of 1994. Finally, data were collected in the U.K. in the spring of 1995. The procedure of collecting the data was identical in the three countries.

All potential respondents were prenotified by phone by one of the project members. They introduced themselves as contributors to an international dissertation project on launch strategies and new product performance. Preliminary notification by phone was used because such a procedure has been found to increase mail-questionnaire response rates considerably (Brunner and Carroll, 1969; Kanuk and Berenson, 1975; Yu and Cooper, 1983). Potential respondents (and the companies they worked for) had to meet three criteria to participate:

1. The company had developed and introduced a new product in the last five years (since 1989);
2. The respondent was responsible for the launch strategy of this new product; and
3. The company had more than 25 employees.

Industries included in the sample were consumer durables, packaged goods, construction/installation, chemicals, and transport/communication. These industries were chosen for two reasons. First, these industries are well known for the high annual number of new product introductions. Second, one of the research objectives of the present research project was to test whether industrial product launch strategies differ from consumer product launch strategies. While the consumer durables and packaged goods were launched in consumer markets, the construction/installation, chemicals and transport/communication products were primarily launched in industrial markets. More details on the data collection in the three different countries are provided below.

The Netherlands.[2] The population of companies to include in the research project was established in The Netherlands by a CD-ROM search. From a total of 150,000 companies available on the CD-ROM[3], 460 companies were identified in the five industries. 115 Companies were excluded because they did not meet the three criteria mentioned above. For the remaining companies, the project members first asked for the marketing manager or marketing director. When no such person was available or present, the project director, commercial director or general director was asked for. A total of 345 managers agreed to participate in the study and received the mail questionnaire. After 10 days a reminder letter was sent to those managers who had not responded yet. This procedure led to a total of 155 usable questionnaires, giving a response rate of 45%. Therefore, the sample consisted of 155 managers representing 155 companies or business units in The Netherlands. The major nonresponse reasons were a company's confidentiality of providing new product information and time pressure. Appendix 5B provides a selection of companies that introduced new products in The Netherlands.

The respondents from a marketing, general management or product development background provided data on 146 (60%) successful and 97 (40%) unsuccessful new products that their company had developed and introduced since 1989 and for which they were responsible. Therefore, the total number of new products included in the Dutch sample equals 243. The success rate (i.e., the percentage of successful products included in the sample) and the overall performance level (measured as the mean of the 15 performance criteria) did not significantly differ among the five product categories. Demographic data and summary statistics are provided in Table 5.1. Appendices 5C and 5D provide a selection of successful and unsuccessful product introductions in The Netherlands.

NPD is important for the firms in the Dutch sample as indicated by the average percentage of company sales and profits generated by new products (43% and 41%). Some significant

Table 5.1: Sample composition and summary statistics

	consumer durables	packaged goods	transport/ communication	chemicals	construction/ installation	total sample
	(1)	(2)	(3)	(4)	(5)	
Dutch sample						
number of firms	39	30	32	8	46	155
number of products	63	45	50	13	72	243
number of successes	38	27	30	8	43	146
number of failures	25	18	20	5	29	97
success rate (% success)	60%	60%	60%	61%	60%	60%
*overall performance**	4.8	4.9	4.3	4.5	4.3	4.6
% of sales by new products[A]	61%	28%	55%	25%	34%	43%
% of profits by new products[B]	57%	30%	51%	28%	31%	41%
U.K. sample						
number of firms	45	76	64	33	74	292
number of products	80	129	106	54	122	491
number of successes	45	76	64	33	74	292
number of failures	35	53	42	21	48	199
success rate (% success)	56%	59%	60%	61%	61%	59%
*overall performance**	4.2	4.2	4.2	4.1	4.0	4.1
% of sales by new products	55%	46%	52%	48%	55%	51%
% of profits by new products	48%	39%	45%	42%	46%	44%
U.S. sample						
number of firms	30	35	46	39	25	175
number of products	50	62	76	60	40	288
number of successes	29	32	41	36	22	160
number of failures	21	30	35	24	18	128
success rate (% success)	58%	52%	54%	60%	55%	56%
*overall performance**	4.3	4.5	4.0	4.2	4.2	4.2
% of sales by new products	54%	39%	49%	35%	38%	43%
% of profits by new products	52%	40%	46%	35%	34%	42%

* Mean of the 15 performance criteria with '1' = did not meet criteria at all and '7' = met criteria completely

[A] $p < .01$ (One-way ANOVA, post hoc Scheffé); 1,3 > 2,4,5

[B] $p < .01$ (One-way ANOVA, post hoc Scheffé); 1 > 2,4,5

differences were found in both percentages among the five product categories. The percentage of company sales generated by new products was significantly higher for the consumer durables and transport/communication products than for the other three product categories while the percentage of company profits generated by new products was significantly higher for the consumer durables than for the packaged goods, chemicals and construction/installation products. Finally, 82% of the respondents requested the results of the study showing that they had, in general, a positive attitude toward the investigation, and that there is a large interest among managers on how to launch a new product successfully.

U.K. Data were collected in the U.K. in the spring of 1995 by project members from the Heriot-Watt University in Edinburgh.[4] Names, addresses and phone numbers for potential respondents in the five industries for firms with more than 25 employees were obtained from McMillan's *Top 10,000 Manufacturing Companies in the U.K.,* Sell's *Directory of Manufacturing Companies* and Dun & Bradstreet's *Key to British Enterprises.* From an original sample frame of 1,906 firms listed in the major manufacturing directories, after initial contact by phone, 533 were excluded because of a company policy of confidentiality. A further 271 were unable to identify a successful or unsuccessful new product and were therefore excluded. Of the remaining 1102, 497 agreed to participate in the survey and the effective number of usable questionnaires returned was 292, giving an effective response of 27%. The five industry categories were well represented.

The 292 respondents representing 292 U.K. companies or business units provided data on 491 product introductions of which 292 (59%) were designated by the respondent as successful and 199 (41%) as unsuccessful. The success rate and the overall performance level of those introductions did not significantly differ among the product categories. The U.K. percentages of sales and profits generated by new products were the highest among the three countries (51% and 44%) indicating that NPD may be most important for firms to pursue in this country. In addition, no differences were found for both percentages among the product categories. See Table 5.1 for a complete overview of the U.K. sample.[5]

U.S.A. Names, addresses and phone numbers for potential U.S. respondents were obtained in the Summer of 1994 from the directories of the *Product Development and Management Association (PDMA), the Marketing Science Institute (MSI),* and the *Institute for the Study of Business Markets (ISBM).* From a total of 478 questionnaires that were sent out, by the author

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[4] Data were collected in the U.K. by Susan Hart and Kirsty Garrett.

[5] The question on whether respondents requested the results of the study was deleted in the U.K. survey for lay out reasons.

and by ISBM[6], to managers who met our criteria and agreed to participate, and after a reminder postcard was sent to those who had not responded yet, 175 usable questionnaires were received (37%). The 175 managers from 175 different U.S. companies or business units included in the sample provided launch decision and performance data on a total of 288 new products of which 160 were successful (56%) and 128 were unsuccessful (44%).

The number of firms, product introductions, and successful and unsuccessful new products were adequately distributed among the five industries. In addition, the success rate and overall performance levels were similar for the product categories included in the sample. The percentages of sales and profits generated by new products were similar to the Dutch sample (43% and 42%) while no significant differences in both percentages were found among the five industries. A majority of the respondents (78%) requested the results of the study showing, again, the large interest among the respondents in the subject under investigation. Table 5.1 also provides a complete overview of the U.S. sample.

Total Sample. The analyses in the present chapter will be based on the total sample. The composition of this sample and summary statistics are presented in Table 5.2. The 622 firms, adequately represented in the five industries covered in the present research project, provided data on a total of 1,022 new product introductions of which 598 (59%) were designated by the respondent as successful and 424 (41%) as unsuccessful. This success rate and the overall performance level of the product introductions did not significantly differ among the five industries. The percentages of company sales and profits generated by products that were introduced since 1989 were 47% and 43%. Some differences were found in both percentages among the five product categories. The percentages of company sales and profits generated by new products were significantly higher for the consumer durables than for the packaged goods, chemicals and construction/installation products. In addition, the percentage of company sales generated by new products was significantly higher for the transport/communication products than for the packaged goods while the percentage of company profits generated by new products was significantly higher for the transport/communication products than for the packaged goods and chemicals.

Hypotheses 1_A and 1_B will be tested below by crosstabulating the strategic and tactical launch decisions with new product outcome, namely successful or unsuccessful. However, it was first necessary to investigate whether the performance of the sample of successful products was higher than for the sample of unsuccessful products. A MANOVA procedure with new product outcome (i.e., successful or unsuccessful) as the independent variable and the 15 performance

6 Gary Holler and Gary Lilien of the *Institute for the Study of Business Markets* (ISBM) at Penn State University kindly allowed me access to their pool of companies.

Table 5.2: Total sample composition and summary statistics

	consumer durables	packaged goods	transport/ communication	chemicals	construction/ installation	total sample
	(1)	(2)	(3)	(4)	(5)	
number of firms	114	141	142	80	145	622
number of products	193	236	232	127	234	1022
number of successes	112	135	135	77	139	598
number of failures	81	101	97	50	95	424
success rate (% success)	58%	57%	58%	61%	59%	59%
*overall performance**	4.2	4.2	4.2	4.1	4.0	4.1
% of sales by new products[A]	56%	41%	52%	40%	46%	47%
% of profits by new products[B]	52%	37%	47%	37%	39%	43%

* Mean of the 15 performance criteria with '1' = did not meet criteria at all and '7' = met criteria completely

[A] $p < .01$ (Oneway ANOVA, post hoc Scheffé); $1 > 2,4,5$; $3 > 2$.

[B] $p < .01$ (Oneway ANOVA, post hoc Scheffé); $1 > 2,4,5$; $3 > 2,4$

indicators as the dependent variables showed that this multivariate test was highly significant (*Hotellings* $T^2 = 4.47$; $p < .0001$). Univariate t-tests showed that the performance ratings were significantly higher for the sample of successful products than for the sample of unsuccessful products on all 15 performance criteria at the $p < .0001$ level. These findings show that the successful products did indeed fare better than the unsuccessful products on each separate indicator of new product performance. The largest differences between the samples of successful and unsuccessful products occurred on the market acceptance and financial performance criteria (i.e., market share, unit sales, revenue, revenue growth, profitability and ROI/IRR). Table 5.3 presents the results of these analyses.

5.3 Results

This section, which investigates whether successful and unsuccessful new products are launched in different ways, has been divided into two parts. The first part investigates differences in *strategic* launch decisions between successful and unsuccessful products. Then, differences in *tactical* launch decisions between successful and unsuccessful products are discussed.

Table 5.3: Performance ratings for successful and unsuccessful products

Performance criteria	Successful products N = 598*	Unsuccessful products N = 424*	Total sample N = 1022*	Univariate test statistics
- product performance level	6.0	4.3	5.3	$t_{596.5}= 20.7; p<.0001$
- met quality guidelines	5.8	4.3	5.2	$t_{661.7}= 16.8; p<.0001$
- customer satisfaction	5.9	3.7	5.0	$t_{587.0}= 26.4; p<.0001$
- customer acceptance	5.8	3.2	4.7	$t_{680.9}= 33.0; p<.0001$
- launched on time	5.2	3.1	4.3	$t_{734.3}= 19.1; p<.0001$
- attained margin goals	5.3	2.5	4.2	$t_{718.9}= 32.0; p<.0001$
- development costs	4.8	3.1	4.1	$t_{685.2}= 15.5; p<0001$
- met revenue goals	5.4	2.1	4.0	$t_{938.3}= 49.1; p<.0001$
- attained profitability goals	5.3	2.2	4.0	$t_{993.0}= 41.4; p<.0001$
- met unit sales goals	5.3	2.0	3.9	$t_{961.5}= 48.0; p<.0001$
- met revenue growth goals	5.2	2.0	3.9	$t_{965.2}= 45.9; p<.0001$
- speed to market	4.7	2.9	3.9	$t_{712.5}= 17.5; p<.0001$
- met market share goals	5.4	1.9	3.9	$t_{920.6}= 50.7; p<.0001$
- break even time	4.9	2.3	3.8	$t_{982.0}= 31.8; p<.0001$
- met IRR/ROI goals	5.0	2.0	3.8	$t_{963.0}= 39.1; p<.0001$

Multivariate test statistic: *Hotellings* $T^2 = 4.47; p < .0001$

Note: True N per test varies because of missing data. Performance criteria were measured on a scale with '1' = did not meet criteria at all and '7' = met criteria completely.

Strategic launch decisions

To test Hypothesis 1_A which stated that strategic launch decisions differ between successful and unsuccessful products, all strategic launch decisions were crosstabulated with new product outcome, successful or unsuccessful. Table 5.4 contains the results of these crosstabulations. Thirteen out of the 21 tests showed a statistically significant relationship between new product outcome and strategic launch decisions at $p < .05$ or better. This result strongly suggests that strategic launch decisions differ between successful and unsuccessful new products. Therefore, Hypothesis 1_A was supported.

The adjusted residuals in the contingency tables showed where the significant differences were located (Haberman, 1973; Siegel and Castellan, 1988). Because the adjusted residuals have approximately a normal distribution with mean 0 and variance 1 (when the sample size is large), an adjusted residual higher than |2| indicates a statistically significant difference at $p < .05$.

Table 5.4: Strategic launch decisions for successful and unsuccessful products

	Successful products N = 598*	Unsuccessful products N = 424*	Total sample N = 1022*	Test statistic
Product innovativeness				
- more innovative	**54**%	31%	45%	$\chi^2(2)=71.5$;
- equally innovative	43%	**55**%	48%	$p<.0001$
- less innovative	3%	**14**%	8%	
NPD cycle time				
- less than 6 months	7%	6%	7%	$\chi^2(3)=92.3$;
- 6 months - 1 year	**32**%	18%	26%	$p<.0001$
- 1 - 3 years	**51**%	43%	48%	
- more than 3 years	10%	**33**%	19%	
Product newness				
- completely new	12%	16%	**14**%	$\chi^2(5)=47.3$;
- new product line	28%	**34**%	30%	$p<.0001$
- addition to line	32%	37%	34%	
- improvement	**23**%	8%	17%	
- repositioning	2%	**4**%	3%	
- low cost	**3**%	1%	2%	
Perception customers				
- incremental improvement	33%	36%	34%	$\chi^2(2)=2.5$;
- major improvement	56%	55%	55%	$p=.29$
- never seen before	12%	9%	11%	
Targeting strategy				
- niche	**28**%	21%	25%	$\chi^2(2)=10.0$;
- selective	46%	46%	46%	$p<.01$
- mass-market	26%	33%	29%	
Market growth rate				
- less than 0%	6%	6%	6%	$\chi^2(3)=11.8$;
- 0% - 5%	39%	**50**%	43%	$p<.01$
- 5% - 10%	**35**%	28%	32%	
- more than 10%	20%	16%	19%	
Stage of the PLC				
- introduction	13%	**19**%	15%	$\chi^2(3)=10.4$;
- growth	37%	38%	37%	$p<.05$
- maturity	**48**%	40%	45%	
- decline	3%	3%	3%	
Market competitiveness				
- not one competitor	16%	14%	15%	$\chi^2(2)=10.2$;
- 1 to 3 competitors	**46**%	38%	43%	$p<.01$
- $\geq$ 4 competitors	38%	**48**%	42%	
Timing strategy				
- technological innovator	45%	45%	45%	$\chi^2(2)=0.7$;
- fast imitator	49%	49%	49%	$p=.97$
- cost reducer	6%	7%	6%	
Driver of NPD				
- completely market	6%	4%	5%	$\chi^2(3)=2.8$;
- mainly market	50%	51%	50%	$p=.42$
- mix market/technology	31%	30%	31%	
- mainly technology	13%	15%	14%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Table 5.4: Strategic launch decisions for successful and unsuccessful products (continued)

	Successful products N = 598*	Unsuccessful products N = 424*	Total sample N = 1022*	Test statistic
Objectives				
- expand product range	76%	73%	75%	$\chi^2_2(1)=1.4; p=.24$
- **increase market penetration**	**69%**	59%	65%	$\chi^2_2(1)=10.6; p<.01$
- **capitalize on existing market**	**59%**	48%	54%	$\chi^2_2(1)=12.2; p<.001$
- **barriers for competition**	**45%**	38%	42%	$\chi^2_2(1)=4.7; p<.05$
- capitalize on new technology	33%	32%	32%	$\chi^2_2(1)=0.1; p=.75$
- **produce at lower costs**	**31%**	23%	28%	$\chi^2_2(1)=9.2; p<.01$
- **increase company's image**	**31%**	22%	27%	$\chi^2_2(1)=10.1; p<.01$
- foothold in new market	22%	24%	23%	$\chi^2_2(1)=0.4; p=.50$
- preempt emerging segment	18%	18%	18%	$\chi^2_2(1)=0.06; p=.81$
- **utilize excess capacity**	12%	**18%**	15%	$\chi^2(1)=5.2; p<.05$
- offset seasonal cycle	6%	5%	6%	$\chi^2(1)=0.3; p=.57$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

The adjusted residuals showed that successful products were more often (in comparison with the unsuccessful product):

- more innovative than competitors' efforts;
- swiftly developed (i.e., within 6 months and 3 years);
- improvements of existing products or products produced at lower costs;
- targeted at a niche market;
- introduced in a market with moderate growth (i.e., 5 - 10%);
- introduced in the maturity stage of the product life cycle;
- introduced in somewhat competitive markets (i.e., 1 - 3 competitors present);
- launched with the objectives of:
  - increasing market penetration,
  - capitalizing on an existing market,
  - putting up barriers for the competition,
  - producing existing products at lower costs, and
  - increasing the company's image.

In contrast, unsuccessful products were more often:

- equally or less innovative than competitors' efforts;
- slowly developed (i.e., in more than 3 years);

- new product lines;
- targeted at a mass-market;
- introduced in low-growth markets (i.e., 0 - 5%);
- launched in the introduction stage of the product life cycle;
- introduced in competitive markets (i.e., more than 4 competitors present);
- launched with the objective of:
  - using excess capacity.

Eight strategic launch decisions (including five objectives) remained independent of product outcome: customer perceptions, timing strategy, NPD driver, and the five objectives expanding the product range, capitalizing on a new technology, establishing a foothold in a new market, preempting an emerging market segment and offsetting a seasonal cycle. Apparently, successful and unsuccessful products do not differ with regard to how customers perceive the new product, what timing strategy the firm follows and what the driver of the NPD effort is.

In addition, successful and unsuccessful product introductions did not differ in terms of five objectives. Since new products were infrequently launched with the last three objectives (i.e., in 23%, 18% and 6% of the cases), the first two objectives are most relevant. It appears that successful and unsuccessful products are equally often launched with the objectives of expanding the product range and of capitalizing on a new technology. However, apart from the eight strategic variables mentioned above, there were marked differences between successful and unsuccessful products when strategic launch decisions are considered.

Tactical launch decisions
To test Hypothesis 1_B which stated that tactical launch decisions differ between successful and unsuccessful products, all tactical launch decisions were crosstabulated with new product outcome, successful or unsuccessful. Table 5.5 contains the results of these crosstabulations.

Twelve out of the 17 tests showed a statistically significant relationship between new product outcome and tactical launch decisions at $p < .05$ or better. All launch tactics except some of the specific marketing communications instruments used differed significantly between the sample of successful and the sample of unsuccessful products. These results strongly suggest that tactical launch decisions differ between successful and unsuccessful new products. Therefore, Hypothesis 1_B was supported.

Table 5.5: Tactical launch decisions for successful and unsuccessful products

	Successful products N = 598*	Unsuccessful products N = 424*	Total sample N = 1022*	Test statistic
Breadth of assortment				
- broader	**36%**	21%	30%	$\chi^2(2)$=66.8;
- equally broad	**50%**	44%	47%	p<.0001
- smaller	14%	**36%**	23%	
Branding strategy				
- new brand name	27%	**36%**	31%	$\chi^2(3)$=15.4;
- brand extension	**41%**	29%	36%	p<.01
- company name	28%	30%	29%	
- generic / no brand	4%	4%	4%	
Distribution channels				
- current channels	**80%**	73%	77%	$\chi^2(2)$=7.4;
- new channels	4%	**7%**	5%	p<.05
- both current / new	17%	20%	18%	
Distribution expenditures				
- higher	18%	15%	17%	$\chi^2(2)$=28.5;
- about the same	**71%**	62%	67%	p<.0001
- lower	11%	**24%**	16%	
Price level				
- higher	30%	30%	30%	$\chi^2(2)$=14.3;
- about the same	**46%**	35%	42%	p<.001
- lower	24%	**34%**	29%	
Pricing strategy				
- skimming	31%	29%	31%	$\chi^2(2)$=8.4;
- penetration	45%	39%	43%	p<.05
- other	24%	**32%**	27%	
Promotion expenditures				
- higher	**27%**	19%	24%	$\chi^2(2)$=21.7;
- about the same	49%	44%	47%	p<.0001
- lower	24%	**37%**	30%	
Communication channels				
- salesforce promotion	78%	76%	77%	$\chi^2(1)$=0.3; p=.59
- trade promotion	70%	70%	70%	$\chi^2(1)$=0.0; p=.95
- customer promotion	53%	51%	53%	$\chi^2(1)$=0.5; p=.48
- personal selling	52%	48%	50%	$\chi^2(1)$=1.2; p=.27
- **direct marketing**	**41%**	30%	36%	$\chi^2(1)$=13.5; p<.001
- **print-advertising**	**39%**	26%	34%	$\chi^2(1)$=18.8; p<.0001
- **public relations**	**36%**	28%	33%	$\chi^2(1)$=5.7; p<.05
- trade shows	13%	12%	13%	$\chi^2(1)$=0.3; p=.57
- **tv-advertising**	**11%**	7%	9%	$\chi^2(1)$=4.7; p<.05
- **radio-advertising**	**7%**	3%	5%	$\chi^2(1)$=7.5; p<.01

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

The results showed that successful products were more often (in comparison with the unsuccessful products):

- launched in a broader or equally broad assortment than competitors' efforts;
- brand extensions;
- distributed through current distribution channels;
- launched with similar distribution expenditures as competitive products;
- priced about the same as competing products;
- launched with higher promotion expenditures than competitive products;
- launched while using more of the following marketing communications instruments:
  - direct marketing,
  - print-advertising,
  - public relations,
  - tv-advertising, and
  - radio-advertising.

In contrast, unsuccessful products were more often:

- launched in a smaller assortment than competitors' efforts;
- introduced with a new brand name;
- distributed through new distribution channels;
- launched with lower distribution expenditures than competitive products;
- lower-priced than competing products;
- not skimming or penetration-priced (i.e., with an other pricing strategy); and
- launched with lower promotion expenditures than competitive products.

The reported use of five marketing communications instruments did not significantly differ between the successful and unsuccessful products: salesforce promotion, trade promotion, customer promotion, personal selling and trade shows. The first four instruments were equally often used to communicate successful and unsuccessful products whereas trade shows were infrequently used for both samples. On average, however, there were clear differences between successful and unsuccessful products when tactical launch decisions are considered.

Taken together, the results of the separate analyses of strategic and tactical launch decisions clearly show that launch decisions for successful and unsuccessful products differ in statistically significant and conceptually meaningful ways. Comparing the present results with the findings from previous specialist studies (see Table 2.2) shows that the results reported here

are consistent with earlier findings on product innovativeness (Biggadike, 1979), NPD cycle time (Choffray and Lilien, 1984, 1986), market growth rate (Biggadike, 1979; Gatignon, Weitz and Bansal, 1990; Ryans, 1988), market competitiveness (Biggadike, 1979; Choffray and Lilien, 1986; Green, Barclay and Ryans, 1995; Green and Ryans, 1990; Lambkin, 1988, 1992; Robinson and Fornell, 1985; Ryans, 1988), product newness (Choffray and Lilien, 1984, 1986; Ryans, 1988), distribution and promotion expenditures (Choffray and Lilien, 1986; Green, Barclay and Ryans, 1995; Green and Ryans, 1990; Lambkin, 1988, 1992; Robinson and Fornell, 1985; Ryans, 1988; Urban et al., 1986; Yoon and Lilien, 1985), breadth of product assortment (Biggadike, 1979; Lambkin, 1988, 1992; Robinson and Fornell, 1985) and the use of skimming or penetration pricing strategies (Hultink and Schoormans, 1995). Apparently, new product performance is likely to be higher when NPD cycle time is short, the product is relatively more innovative but not completely new, the product is targeted at a fast-growing noncompetitive market, a skimming or penetration strategy is followed, relative promotion and distribution expenditures are higher and when the breadth of product assortment is relatively broader.

The results were inconsistent with previous findings with regard to the targeting strategy (Biggadike, 1979; Lambkin, 1988, 1992), stage of the product life cycle (Biggadike, 1979; Ryans, 1988; Yoon and Lilien, 1985) and relative price level (Biggadike, 1979; Choffray and Lilien, 1984, 1986; Lambkin, 1988, 1992; Robinson and Fornell, 1985). First, whereas earlier studies found that the scale of market entry should be large to be successful, the present study showed that niche strategies were more likely to be successful than mass-market strategies. An explanation for this finding may be that competitor reactions to a small scale launch are smaller and less severe than those to a large scale launch because niche strategies are probably considered less hostile than mass-market strategies (Bowman and Gatignon, 1995; Heil and Walters, 1993; Robinson, 1988). In addition, earlier studies showed that new products that are introduced in an early stage of the product life cycle are more likely to be successful. The present study found that products that are introduced in the maturity stage were more successful. It may be easier to launch a product in a well-established market than in a fluid market because customer preferences are usually better defined in an established market. Finally, earlier studies showed that new product performance is likely to be higher when the relative price is lower. In contrast, the present study found that unsuccessful products were more often lower-priced than competing products. It is possible that these products were low-priced because they did not have any other advantages to offer. Apparently, despite the low price, there was no incentive for customers to purchase these new products.

A final reason some results differ from earlier findings may be related to the sample of the present project. The analyses reported above were based on the total sample of new products. This sample consisted of consumer and industrial new products that were launched in three

different countries. Previous studies generally focused on a single product type (i.e., consumer or industrial) and were usually conducted in a single country. Therefore, additional analyses investigated to which extent the results reported above equally held across the constituent subsamples.

Generalizability of the findings

To check the generalizability of the results, all analyses reported above were repeated for five different subsamples: the sample of consumer products, the sample of industrial products, the Dutch introductions, the U.K. introductions and the U.S. introductions. Appendices 5E to 5N contain the results of these crosstabulations. A summary of those findings is presented in Tables 5.6 and 5.7. Tables 5.6 and 5.7 show that the results were similar for the five subsamples on some variables and dissimilar on others. For instance, in most subsamples, successful new products were relatively more innovative, an improvement of existing products and launched in a broad assortment. Unsuccessful new products were in most cases equally or less innovative, slowly developed, launched in low-growth markets in a small assortment with relatively lower distribution and promotion expenditures and a low-price.

Tables 5.6 and 5.7 also show some important differences among the subsamples in how to achieve success or prevent failure. The differences between the consumer sample and industrial sample were relatively small. This finding suggests that the relationships between the strategic and tactical launch decisions will probably also differ to a small extent between both product types (see Chapter Seven). However, the differences among the countries were relatively large. For instance, little consensus arose from the Dutch and U.S. data on what decisions are associated with higher success. In the U.K. in contrast, many definite decision levels were found associated with higher success. Although these results may partly be explained by the smaller size of the Dutch and U.S. samples, it may also suggest that the structures between the strategic and tactical launch decisions will differ among countries (see Chapter Eight).

5.4 Conclusions and Implications

Chapter Five investigated differences in strategic and tactical launch decisions between successful and unsuccessful products. The univariate analyses reported in this chapter showed that the data supported Hypotheses 1_A and 1_B: Strategic and tactical launch decisions differ between successful and unsuccessful products in statistically significant and conceptually meaningful ways. The findings were largely consistent with earlier findings in the field and partly applied to several subsamples making up the total sample.

Table 5.6: Launch decisions associated with successful products

	total sample N=598	consumer products N=250	industrial products N=345	Dutch products N=146	U.K. products N=292	U.S. products N=160
Product innovativeness	more	more	more	more	more	more
NPD cycle time	6 months-3 years	6 months-3 years	6 months-1 year	n.s.	< 3 years	n.s.
Product newness	improvement	improvement	improvement	improvement	improvement	improvement
Perception customers	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Targeting strategy	niche	n.s.	n.s.	n.s.	niche	n.s.
Market growth rate	5%-10%	5%-10%	more than 10%	n.s.	5%-10%	n.s.
Stage of the PLC	maturity	n.s.	maturity	growth	maturity	n.s.
Market competitiveness	1 to 3	n.s.	1 to 3	n.s.	1 to 3	n.s.
Timing strategy	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Driver of NPD	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Objectives	penetration / existing market / put up barriers / lower costs / increase image	put up barriers / existing market / increase image	penetration / lower costs / increase image	put up barriers / penetration / lower costs	new market / increase image	penetration / existing market
Breadth of assortment	broader/same	broader	broader	broader	broader/same	broader
Branding strategy	brand extension	brand extension	n.s.	n.s.	brand extension	n.s.
Distribution channels	current	n.s.	n.s.	n.s.	current	n.s.
Distribution expenditures	same	higher	same	n.s.	higher/same	n.s.
Price level	same	same	n.s.	n.s.	same	n.s.
Pricing strategy	n.s.	penetration	n.s.	n.s.	skimming	n.s.
Promotion expenditures	higher	higher	same	n.s.	higher/same	n.s.
Communication channels	direct marketing / print-advertising / public relations / tv-advertising / radio-advertising	tv-advertising / radio-advertising / print-advertising / public relations	direct marketing / print-advertising		direct marketing / tv-advertising / radio-advertising / print-advertising / public relations	direct marketing

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulating the launch decisions with product outcome.

Table 5.7: Launch decisions associated with unsuccessful products

	total sample N=424	consumer products N=192	industrial products N=231	Dutch products N=97	U.K. products N=199	U.S. products N=128
Product innovativeness	equal/less	equal/less	equal/less	equal/less	equal/less	less
NPD cycle time	more than 3 years	more than 3 years	more than 3 years	n.s.	more than 3 years	n.s.
Product newness	new product line	n.s.	new product line	completely new	new line/addition	completely new
Perception customers	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Targeting strategy	mass-market	n.s.	mass-market	n.s.	mass-market	n.s.
Market growth rate	0% - 5%	0% - 5%	negative growth	n.s.	0% - 5%	n.s.
Stage of the PLC	introduction	n.s.	introduction	introduction	growth	introduction
Market competitiveness	more than 4	n.s.	more than 4	n.s.	more than 4	n.s.
Timing strategy	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Driver of NPD	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Objectives	excess capacity	excess capacity			excess capacity	
Breadth of assortment	smaller	smaller	smaller	smaller	smaller	smaller
Branding strategy	new brand	new brand/company	new brand/company	n.s.	new brand/company	n.s.
Distribution channels	new	n.s.	new	new	both current/new	n.s.
Distribution expenditures	lower	lower	lower	n.s.	lower	lower
Price level	lower	lower	lower	n.s.	lower	n.s.
Pricing strategy	other	other	n.s.	n.s.	other	n.s.
Promotion expenditures	lower	lower	lower	n.s.	lower	n.s.
Communication channels						

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulating the launch decisions with product outcome.

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To summarize, the results suggest that to achieve positive new product performance, the new product launch should contain:

- an innovative new product that offers improvements over existing products;
- a swiftly developed new product, so few competitors are around;
- a product targeted at a well-specified niche, to avoid strong competitor reactions;
- a product launched in a moderately growing, noncompetitive market in the maturity stage of the product life cycle to capitalize on well-established customer needs and preferences;
- explicit market penetration objectives for an existing market;
- objectives for putting up barriers for competition, increasing the company's image and producing existing products at lower costs;
- relatively high promotion expenditures to raise customer awareness and interest in the new product;
- a broad product assortment to cover customer preferences and budgets;
- a brand name from another product group to assure broad acceptance by capitalizing on the other brand's familiarity and value;
- current distribution channels that are well-known and familiar to the firm so high distribution synergies may be attained; and
- an emphasis on direct marketing, print-advertising, tv-advertising, radio-advertising and public relations to educate and persuade customers about the innovative new product.

These results provide clear guidance on what elements of the launch strategy need special attention. This is not to say that the other elements of the launch strategy can be ignored. It is possible, for example, that combinations of these elements with other launch elements contribute to new product performance. Whereas Chapter Five analyzed differences in launch decisions between successful and unsuccessful products with univariate analyses, Chapter Six will investigate associations among the various launch decisions through multivariate analyses. In addition, the impact of those associated launch decisions on new product performance will be investigated.

6. ASSOCIATIONS AMONG THE STRATEGIC AND TACTICAL LAUNCH DECISIONS AND NEW PRODUCT PERFORMANCE[1]

6.1 Introduction

Marketing theory and empirical findings have suggested the relevance of investigating the specific combinations of strategic and tactical launch decisions that reinforce each other to jointly drive new product performance. However, previous research has not established to a sufficient degree which tactical launch decisions are appropriate, given the strategic agenda that can be shown to lead to increased performance. The present chapter aims to fill parts of this gap in current knowledge.

Chapter Six first examines the associations among strategic and tactical launch decisions to build an empirically-based integrated view of new product launch strategies (testing Hypothesis 2_A). Then, the impact of these associated launch decisions on new product performance will be dealt with (testing Hypothesis 2_B). The present chapter will test both hypotheses for the total sample (i.e., the data for the consumer and industrial products launched in the three countries combined). These analyses may result in a small number of generic launch strategies that managers tend to use.

6.2 Analyses and Results

To test how strategic and tactical launch decisions are interrelated and how these launch strategy combinations relate to new product performance, data on successful and unsuccessful new products were collected (see Chapter Five). In total, 622 respondents representing 622 firms or business units from five industries provided data on 1,022 new product introductions of which 598 (59%) were designated by the respondent as successful and 424 (41%) as unsuccessful. Data were collected on strategic launch decisions, tactical launch decisions and new product performance indicators. Tables 3.2 and 3.3 show the strategic and tactical launch decision variables included in the survey and the response categories for each variable. Table 4.1 depicts the project-level measures of new product performance (Griffin and Page, 1993, 1996).

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[1] This chapter is an adaptation of Hultink, E.J., A. Griffin, H.S.J. Robben and S. Hart (1996). In search of generic launch strategies. In: Norrgren, F., C. Karlsson, A. De Meyer and J. Utterback (Eds.). *Proceedings of the 3rd EIASM International Product Development Conference*, INSEAD, Fontainebleau, France, p. 381-395.

The data for the 1,022 introductions were organized into a set of 21 strategic launch decisions, a set of 17 tactical launch decisions and a set of 15 new product performance indicators. The first analysis determined whether interrelationships existed between the *sets* of strategic and tactical launch decisions (testing Hypothesis 2_A) using canonical correlation analysis. This analysis illustrated which strategic and tactical launch decisions were associated, and which variables were independent of the others that were investigated. Once the associated launch decisions were identified, the next step in the analysis was to determine what particular decision responses managers make within those sets of variables. Because some variables included in the data were nominal in nature, the first step in the analysis only provided directionality in the decision sets which managers make. The second analytical step was required to provide the precise decision levels that were associated. This second step involved clustering the new products on the results of the first step, namely on the canonical variate scores (i.e., the sets of associated launch decisions). This procedure resulted in three clusters of new products that are launched with similar sets of related strategic and tactical launch decisions. Finally, to test Hypothesis 2_B, a set of ANOVAs assessed the differences in new product performance among these three clusters.

6.2.1 Associations between the sets of strategic and tactical launch decisions

The associations between the sets of strategic and tactical launch decisions as illustrated in the conceptual model (see Figure 3.1) required using analytical techniques that take these associations into account when assessing the impact of launch decisions upon new product performance. Canonical correlation analysis determines whether relationships exist between sets of variables (Alpert and Peterson, 1972; Kuylen and Verhallen, 1981). This technique was used to ascertain the associations across the strategic and tactical launch variables. The analysis computed dimensions from both sets of variables comparable to factors in principal components analysis. The aim of canonical correlation analysis is to account for as much variance in relationships among the variable sets as possible. Because of the nonparametric measurement level of the present data (i.e., nominal and ordinal), it was necessary to rely on procedure OVERALS (Dijksterhuis and Van Trijp, 1995; *SPSS Categories*[TM], 1990).

From a total of 1,022 introductions, 53 new products were removed due to missing data values in both sets of variables. Therefore, the canonical correlation analysis was run on 969 introductions. Given the exploratory nature of the investigation, an appropriate solution was sought by inspecting one to four-dimensional solutions. A two-dimensional solution described the data structure best. The three-dimensional solution was difficult to interpret because only three variables loaded higher than .30 on the third dimension of which two also loaded high on

the first or second dimension. In the four-dimensional solution the convergence test-value had still not been reached after 100 iterations.

A majority of the launch decisions included in the study were related across the two canonical dimensions, supporting Hypothesis 2_A. Eleven (out of 21) strategic launch decisions and nine (out of 17) tactical launch decisions received dimension loadings higher than .30 on the first or second canonical dimension. Table 6.1 summarizes the results from the two-dimensional solution and shows which sets of strategic and tactical launch decisions were interrelated.

The fit of the two-dimensional solution was 1.63 out of a maximum possible of 2, the number of canonical dimensions for a perfect relationship (*SPSS Categories*[TM], 1990). In addition, the eigenvalues of both dimensions (.85 and .80) and the canonical correlation coefficients (.70 and .60) were high. Similar to factor loadings in principal components analysis, the canonical loadings reflect the importance of the original variables in deriving the canonical dimension (Hair et al., 1995). The larger the coefficient, the more important the variable in deriving the canonical variate. For interpretation purposes, those variables with a canonical loading higher than .30 were selected as salient (Schelbergen, 1980; Tabachnick and Fidell, 1983). A two-dimensional solution implies that there are two groupings of launch decisions from the original 38 variables which are associated.

Dimension one. The first dimension suggests that the way in which managers make strategic launch decisions regarding the driver of NPD, product innovativeness, number of competitors, stage of the product life cycle, product newness and with regard to five objectives (capitalizing on an existing market, expanding the product range, producing existing products at lower costs, putting up barriers for the competition and increasing market penetration) are associated with tactical launch decisions dictating the pricing strategy, relative price level, branding strategy, product assortment breadth, and the use of customer and salesforce promotion.

The most important strategic launch decisions in deriving the canonical variate refer to product innovativeness and market development characteristics while the most important tactical launch decisions involve pricing and promotion decisions. Therefore, this dimension is labeled 'price/promotion propositions over the product life cycle.'

The signs of the loadings on the dimensions provided the decision directions that were associated across any two variables. For example, one set of associated launch decisions would include a small assortment of relatively less innovative lower-priced new products developed as a result of a market need which are launched in a later stage of the product life cycle in a market where many competitors are present. The objectives for these new product launches are expanding the product range, putting up barriers for the competition, producing an existing product at lower costs and capitalizing on an existing market.

Table 6.1: Component loadings on two dimensions

Variable	Dimension 1 Loading	Category	Dimension 2 Loading	Category
Strategic launch decisions				
- driver of NPD	**-.566**	**firm**	-.104	
- product innovativeness	**.537**	**product**	-.173	
- number of competitors	**.502**	**market**	**-.514**	**market**
- stage of the PLC	**.510**	**market**	.281	
- capitalize on existing market	**.430**	**firm**	.229	
- expand product range	**.419**	**firm**	.053	
- produce at lower costs	**.411**	**firm**	-.254	
- product newness	**.308**	**product**	**.393**	**product**
- put up barriers	**.329**	**firm**	**.363**	**firm**
- establish foothold	-.190		**-.329**	**firm**
- increase market penetration	**.313**	**firm**	.109	
- preempt emerging segment	-.265		-.145	
- timing strategy	.212		-.230	
- increase company's image	-.224		.197	
- utilize excess capacity	.218		-.096	
- market growth rate	.211		-.118	
- NPD cycle time	.174		.189	
- targeting strategy	.181		-.151	
- customer perception	-.066		-.157	
- capitalize on new technology	-.095		-.059	
- offset seasonal cycle	.068		.008	
Tactical launch decisions				
- pricing strategy	**.466**	**price**	-.208	
- customer promotion	**.454**	**promotion**	**.331**	**promotion**
- price level	**.417**	**price**	-.292	
- salesforce promotion	**.399**	**promotion**	.231	
- branding strategy	**-.395**	**product**	-.124	
- breadth of assortment	**.359**	**product**	-.187	
- distribution expenditures	.190		**-.338**	**distribution**
- tv-advertising	-.098		**.333**	**promotion**
- distribution channels	-.200		**-.329**	**distribution**
- trade promotion	.294		.144	
- public relations	-.265		-.269	
- promotion expenditures	.185		-.172	
- personal selling	-.163		-.081	
- print-advertising	-.152		.122	
- trade shows	.152		-.027	
- radio-advertising	.067		.126	
- direct marketing	.112		-.049	
- eigenvalue	0.85		0.80	
- canonical correlation	0.70		0.60	

- Fit = 1.63 (out of 2)

Note: Component Loadings > .30 are presented in bold

A new brand name is developed for these products which are penetration priced and launched with both customer and salesforce promotion.

This configuration of strategic and tactical launch decisions is consistent with how product life cycle (PLC) theory postulates marketing decisions should change over different stages of the product life cycle (Brown, 1992; Cox, 1967; Day, 1981; Kotler, 1965; Levitt, 1969). While there are many possibilities for growth in the early stages of the PLC, later stages of the PLC feature many competitors in the market, the market growth rate is low, and competition is, therefore, usually severe and concentrated on price or process innovation (Abernathy and Utterback, 1978).

The opposite responses to those identified above may also meld into a launch strategy based on the direction of the signs in the first dimension. Firms may also market a broad assortment of more innovative, completely new products in an early stage of the product life cycle when few competitors are present with a high-price skimming strategy while making full use of the force of the company brand name at the time of the launch.

Dimension two. The second dimension of interrelated launch decisions suggests that strategic decisions managers make regarding the number of competitors, product newness and two objectives (establishing a foothold in a new market and putting up barriers for the competition) are associated with tactical launch decisions regarding distribution expenditures, the choice of distribution channels and the use of customer promotion and tv-advertising. Again, from the signs of the loadings, firms launch less new products with high distribution spending, customer promotion and tv-advertising in a market with few competitors through current distribution channels with the objective of putting up barriers for the competition. This defensive strategy blocks competitors' entry into the market with a combination of a pull and a push strategy. While customers are pulled into the market with customer promotion and tv-advertising, distribution capacity is acquired with high distribution expenditures aimed at current distribution channels. Conversely, when completely new products are launched to establish a foothold in competitive markets, new distribution channels are used and distribution expenditures tend to be lower than competitors'. In line with these launch decisions, the second canonical dimension suggests that firms defend current market positions with less innovative products launched through current distributors while new competitive markets are targeted with innovative products through new distributors. Therefore, the second dimension is labeled 'attack or defend by distribution and promotion tactics.'

Equally interesting as these strategic and tactical associations are the 18 launch decisions that remained unassociated across the two canonical dimensions. Ten strategic launch decisions, including five objectives, were not systematically associated with any tactical variable across the two canonical dimensions: timing strategy, market growth rate, NPD cycle time, targeting strategy, customer perceptions and five objectives: preempting an emerging market segment,

increasing the company's image, using excess capacity, capitalizing on a new technology and offsetting a seasonal cycle. For example, that two companies differ on NPD cycle time, one slow and the other fast, would not prevent them from adopting similar or identical tactical launch decisions.

Eight out of eleven promotion decisions were relatively independent of the strategies implemented earlier in the NPD process across the two canonical dimensions: relative promotion expenditures and whether trade promotion, public relations, personal selling, print-advertising, trade shows, radio-advertising and direct marketing were used in communicating the new product. In other words, only few promotion decisions suggested in the literature correlate with the strategic launch decisions that the firm pursues. Only customer promotion, salesforce promotion and tv-advertising differed depending upon various strategic decisions. Therefore, promotion decisions appeared to be relatively independent of which strategic launch decisions a firm makes.

Promotion decisions were the only tactical launch decisions investigated which did not correlate with the strategic decisions to a large degree. All other tactical decision categories (i.e., product, price and distribution) were associated with strategic launch decisions made earlier in the NPD process. These results support the need to incorporate a broader set of launch variables into a single investigation to better understand the complexity of overall launch strategies.

The analyses reported above demonstrate that strategic and tactical launch decisions are not combined randomly into overall launch strategies. It appears that many launch decisions are interrelated and may be made in sets. If the associations between strategic and tactical launch decisions could be shown to significantly affect new product performance, it may be possible to formulate actionable implications to enhance the effectiveness of product launches and, implicitly, new product development as well. To assess the potential impact of overall launch strategies, it will first be investigated whether firms systematically employed the sets of associated launch decisions. Subsequently, performance differences will be investigated across clusters of products that were launched with similar sets of associated launch decisions.

6.2.2   In search of generic launch strategies: Cluster analyses of the product introductions

Cluster analysis was used to determine whether managers in the sample systematically employed the sets of associated launch decisions. The purpose of this analysis was to investigate whether there is a consistency across managers in the way in which new products are launched. Ideally, this analysis should result in a small number of generic launch strategies that managers tend to use. However, determining which variables to include, which clustering method and algorithm to use and identifying the 'proper' end point of clustering are judgmental and often depend on

the goals that clustering was undertaken to achieve (Griffin, 1989). These problems will be addressed first.

6.2.2.1 Conducting the cluster analyses

In the first stage of a cluster analysis (i.e., the partitioning stage) five major questions need to be considered (Hair et al., 1995; Punj and Stewart, 1983; Wedel, 1990): 1) What are the variables used in computing similarity among objects?; 2) Which clustering method should be used?; 3) How should interobject similarity be measured?; 4) What procedure (algorithm) should be used to place similar objects into groups or clusters?; and 5) How many clusters should be formed?

1) Variable selection. The goal of the present cluster analysis was to determine whether managers systematically employ the sets of interrelated strategic and tactical launch decisions. Therefore, the canonical variate scores obtained in the canonical correlation analysis were used as the input for the cluster analysis. Clustering was done on the canonical variate scores instead of on the responses for the original variables because the variate scores account for the associations found among the strategic and tactical launch variables. In addition, because the variate scores were ratio-scaled, difficulties arising from clustering the nominal variable responses contained in the original data were not encountered.

2) Clustering method. Clustering methods differ according to the type of partitioning obtained: nonoverlapping, overlapping, or fuzzy (Hruschka, 1986). In nonoverlapping clustering, products belong to one and only one cluster; in overlapping clustering, products may belong to more than one cluster; and in fuzzy clustering, products have different probabilities of belonging to several clusters (Oppedijk van Veen and Verhallen, 1986; Wedel, 1990). The main goal of the present cluster analysis was to investigate whether groups of new products are launched with the sets of interrelated strategic and tactical launch decisions in systematic ways. Although interesting, it was not the intention of the present analysis to calculate the chance that a certain new product will be launched with launch strategy A instead of B. Therefore, a nonoverlapping clustering method was chosen.[2]

Two major types of nonoverlapping cluster techniques can be distinguished: the hierarchical (agglomerative) and the nonhierarchical (or partitioning) methods. Hierarchical clustering methods start with single-subject clusters, and link clusters in successive stages of the algorithms

[2] A potential disadvantage of this procedure is that all products will be assigned to a certain cluster, even if some products cannot be adequately described in terms of the canonical dimensions (i.e., when the canonical variate scores are close to zero). A solution to this problem may be to only include those products that received canonical variate ratings above a certain value (for example, higher than .30). However, such a procedure decreases the number of product introductions. Given that an objective of the study was to arrive at generic launch strategies, it was deemed more appropriate to retain all observations in the analyses.

on the basis of similarities between the subjects in the clusters. The nonhierarchical methods start from an initial division of products into a predetermined number of clusters and reassign products until a decision rule terminates the process (Wedel, 1990). Although hierarchical clustering methods are most popular since they are faster, they can be misleading since outliers have a substantial impact on their results. Nonhierarchical clustering methods face the problem on how to select the cluster seed or seeds (Hair et al., 1995). This choice should be based on some practical, objective, or theoretical basis. Here, such a choice would be arbitrary given the exploratory nature of the project. Finally, the outlier problem in hierarchical cluster analysis can be solved by removing outliers from the dataset. For the present purposes, a hierarchical clustering method was chosen.

3) Similarity measures. Interobject similarity can be measured by looking at the closeness or at the distance between pairs of objects. Several similarity measures are available: (squared) Euclidian distance, city-block, normalized distance function and the Mahalanobis distance. Distance measures are the most commonly used measures of similarity between objects. Of these, the (squared) Euclidian distance measure has become most popular (Hair et al., 1995). This measure, in general, faces fewer problems than the city-block distance measure (Hair et al., 1995). Other distance measures such as the normalized distance function and the Mahalanobis distance are recommended when some variables in the cluster analysis are highly correlated. The canonical variate scores in the present research project were uncorrelated ($r = .02$; $p = .62$). Therefore, the Euclidian distance measure was chosen.

4) Clustering algorithms. On the basis of the way the similarities between the products are used to link clusters, different clustering algorithms can be distinguished (Griffin, 1989; Punj and Stewart, 1983; *SPSS Statistics*[TM], 1990; Wedel, 1990). Although more algorithms are available, the four algorithms discussed below are most popular. Other algorithms such as the centroid or median methods have undesirable properties which recommend against their use (Punj and Stewart, 1983).

1. *Single linkage.* This algorithm combines the first two cases with the smallest distance between them. The distance between the new cluster and individual cases is then computed as the minimum distance between an individual case and a case in the cluster. At every step the distance between two clusters is taken to be the distance between their closest points;

2. *Complete linkage.* This algorithm calculates the distance between two clusters as the distance between their two furthest points;

3. *Average linkage.* This algorithm defines the distance between two clusters as the average of the distances between all pairs of cases in which one member of the pair is

from each of the clusters. This differs from the other linkage methods in that it uses information about all pairs of distances and not just the nearest or the furthest. For this reason, it is usually preferred to the single linkage or complete linkage methods for cluster analysis; and

4. *Ward's method.* This method first calculates the means for all variables for each cluster. Then for each case the squared Euclidian distance to the cluster means is calculated. These distances are summed for all of the cases. At each step, the two clusters that merge are those that result in the smallest increase in the overall sum of the squared within-cluster distances.

All four algorithms have their advantages and disadvantages. For example, with single linkage problems occur when clusters are poorly deliniated. In these cases, single linkage forms long snakelike chains, and eventually, all objects are placed in one chain, where products at opposite ends of the chain may be very dissimilar (Hair et al., 1995). Complete linkage eliminates the snaking problem but the problem of measuring distance between groups still arises, especially in the case of outliers. In addition, complete linkage gives little information about the difference between clusters. These clusters can be interpreted only in terms of the similarities within the clusters, which will be maximized (Griffin, 1989). Average linkage methods tend to combine clusters with small variances and tend to be biased toward the production of clusters with approximately the same variance. Finally, Ward's method tends to combine clusters with a small number of observations and is biased toward the production of clusters with approximately the same number of observations. Punj and Stewart (1983) reviewed the use of cluster analysis in marketing and suggested that Ward's method outperforms the other algorithms while average linkage rates second. Further, they suggest to standardize the data prior to clustering because this reduces the sensitivity to the presence of outliers. The present research project will compare the clustering results for the four algorithm procedures.

5) Number of clusters. Selecting the number of clusters is a major problem with all clustering techniques since no standard, objective selection procedure exists. Hair et al. (1995) suggest to compute solutions for different numbers of clusters, and then decide among the alternative solutions based upon a priori criteria, practical judgment, common sense or theoretical foundations. Hence, several solutions were computed and evaluated on the following criteria:

1. The snaking problem (by visual inspection of the dendograms);
2. A reasonable distribution of the number of introductions across clusters (calculated by the coefficient of variation; cf. Griffin, 1989); and
3. The ability of predicting cluster membership from the canonical variate scores (by means of discriminant analysis).

6.2.2.2. Results from the cluster analyses

The canonical variate scores for the 969 introductions were standardized prior to running the cluster analyses (Punj and Stewart, 1983). Since the results from a cluster analysis are particularly sensitive to the presence of outliers a preliminary screening was conducted. Hair et al. (1995) suggest eliminating those observations more than + or - 2.5 standard deviations from the mean. Twenty-six observations did not pass this test. Therefore, the cluster analyses were run on the remaining 943 new product introductions.

The dendograms were compared for the solutions using four different algorithms: single linkage, complete linkage, average linkage and Ward's method. The structure of the dendograms suggested a three or four cluster solution. Excessive chaining did only occur for the single linkage algorithm. To investigate whether the number of introductions were reasonably distributed across the clusters, the coefficient of variation (which was calculated by dividing the standard deviation over the mean number of observations per cluster) was calculated for the three and four cluster solutions. Tables 6.2 and 6.3 present the cluster algorithm comparisons.

Ward's method showed the smallest coefficient of variation for the three cluster solution whereas Ward's method and complete linkage rated best on this criterion for the four cluster solution. Single linkage received a very high score on this coefficient for both solutions because of the chaining problem whereas average linkage scored better than single linkage but worse than complete linkage and Ward's method on this criterion. Multiple discriminant analyses were conducted to determine which of the remaining cluster solutions was optimal (Ward 3, Ward 4 or Complete 4). The standardized canonical variate scores were entered as the independent variables and cluster membership as the dependent variable in the discriminant analyses. A simultaneous method was chosen since there were no a priori reasons for selecting a stepwise procedure and because only a small number of variables entered the discriminant analysis (Klecka, 1980). Therefore, both canonical variate scores entered concurrently. The bottom rows in Tables 6.2 and 6.3 present the results from the multiple discriminant analyses.

As expected, all four algorithms correctly classified the products into the clusters adequately. The single linkage procedure classified almost all of the cases correctly but this was due to extremely unequal group sizes (i.e., the first cluster contained 99.8% and 99.7% of the cases for the three and four cluster solution). Although this solution provided the highest hit ratio, its ability to discriminate between the cluster groups was extremely poor.[3]

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[3] The difference between discriminatory success and classificatory success is especially relevant for the single linkage algorithm. In that solution nearly all cases fell into one group thus yielding little discriminatory power. If actual groups are of equal size, discriminatory success coincides with classificatory success (De Jonge and Oppedijk van Veen, 1982; Morrison, 1969).

Table 6.2: Cluster algorithm comparison (three clusters)

| | Number of new product introductions | | | |
Cluster	Ward's	Complete	Average	Single
1	298	371	306	941
2	260	182	100	1
3	385	390	537	1
average	314.33	314.33	314.33	314.33
standard deviation	64.08	115.00	218.62	542.71
coefficient of variation	0.20	0.37	0.70	1.73
% correctly classified*	93.85%	93.96%	93.85%	99.79%

* After multiple discriminant analysis with cluster membership as the grouping variable and the canonical variate scores as the predictor set

Table 6.3: Cluster algorithm comparison (four clusters)

| | Number of new product introductions | | | |
Cluster	Ward's	Complete	Average	Single
1	298	283	306	940
2	82	88	100	1
3	385	390	508	1
4	178	182	29	1
average	235.75	235.75	235.75	235.75
standard deviation	133.07	130.06	216.20	469.50
coefficient of variation	0.56	0.55	0.92	1.99
% correctly classified*	94.06%	90.03%	95.02%	99.68%

*   After multiple discriminant analysis with cluster membership as the grouping variable and the canonical variate scores as the predictor set

The results in Tables 6.2 and 6.3 suggest choosing the Ward 3 solution. Ward 3 and Ward 4 received a higher hit ratio than the Complete 4 solution (93.85% and 94.06% versus 90.03%). For reasons of parsimony, Ward's 3 cluster solution was selected. This solution was also suggested by the dendogram for Ward's solution. To interpret this three-cluster solution several analyses were conducted:

1. The average canonical variate scores were calculated per cluster and compared (see 6.2.3);
2. The clusters were interpreted in terms of the salient original variables that entered the canonical correlation analysis (see 6.2.4);
3. The performance implications of the clusters were compared (see 6.2.5); and
4. The clusters were crosstabulated with product type and with country of introduction (see 6.2.6).

6.2.3   Interpreting the clusters with the canonical variate scores

The average canonical variate scores were calculated for the three clusters (see Table 6.4). As expected, one-way analyses of variance indicated that both canonical variate scores significantly differed among the clusters ($F(2,940) = 783.2$; $p < .0001$; $F(2,940) = 621.8$; $p < .0001$).

Table 6.4: Canonical variate scores for the three clusters

	Cluster Name	Average Variate Score Dimension 1*	Average Variate Score Dimension 2*
Cluster 1 (N=298)	Technological Innovations	-0.81	-0.88
Cluster 2 (N=260)	Offensive Improvements	-0.56	1.03
Cluster 3 (N=385)	Defensive Additions	0.96	-0.14

* One-way ANOVA; all means were statistically significant at $p < .0001$.

Cluster 1 (N=298) is labeled the *Technological Innovations* launch. The products in this cluster received negative ratings on the first and second canonical variate (-0.81, -0.88), describing a group of introductions that are new, relatively more innovative, driven by technological capabilities and introduced in an early stage of the product life cycle with the objective to establish a foothold in a new market. Tactical launch decisions associated with this strategy are a broad product assortment, a new brand name, new distribution channels, lower distribution expenditures, and a high-price skimming strategy. Polaroid's launch into integral instant photography in the 1970's may be a representative example of this generic launch strategy.

Cluster 2 (N=260), referred to as the *Offensive Improvements* launch, received a negative rating on the first and a positive rating on the second canonical variate (-0.56, 1.03). This strategy launches moderately new products into a market with few competitors to put up competitive

barriers. Tactical launch decisions associated with this strategy are a broad product assortment, current distribution channels, higher distribution expenditures, higher prices, and the use of both customer promotion and tv-advertising. Pillsbury's launch of each successive wave of Snackwell's™ line extensions in the U.S.A. may be representative of this strategy in low-fat foods.

Cluster 3 (N=385) is the *Defensive Additions* launch strategy. This strategy loaded positively on the first and negatively on the second canonical variate (0.96, -0.14), resulting in a set of market-driven, less innovative reformulated new products that are introduced later in the product life cycle in a market where many competitors are present with the objectives of expanding the product range, putting up barriers for the competition, increasing market penetration, producing existing products at lower costs and capitalizing on an existing market. Tactical launch decisions associated with this strategy are a small assortment, a brand extension, lower prices, a penetration strategy and the use of customer and salesforce promotion. Many new ready-to-eat cereals fit this launch strategy.

To conclude, three generic launch strategies for new products were derived by clustering the interrelationships among the strategic and tactical launch decisions. These strategies are descriptions of sets of interrelated launch decisions that managers make. The launch strategies could be adequately interpreted in terms of the canonical variates. While the *Technological Innovations* strategy received negative ratings on both canonical variates, the second strategy received a positive rating on the second canonical variate and the third strategy on the first canonical variate. Apparently, few products are launched with positive ratings on both canonical variates.

6.2.4 Interpreting the clusters with the original variables

To interpret the clusters in terms of the original variables, cluster membership was crosstabulated with those variables that loaded higher than .30 on the first or second canonical dimension. Table 6.5 presents the findings from this analysis.

The interpretation was similar to the findings reported above but some additional differences appeared as the result of the crosstabulations that were masked by inspecting the average canonical variate scores. For example, products launched with an *Offensive Improvements* strategy were improvements of existing products whereas products launched with a *Defensive Additions* strategy were more often additions to existing lines. In addition, while *Offensive Improvements* launches were based on a mix of both market needs and technological possibilities, *Technological Innovations* and *Defensive Additions* resulted only from technological possibilities or market needs, respectively. With respect to the tactical launch

Table 6.5: A typology of generic launch strategies

Decisions	Cluster 1 (N=298) *Technological Innovations* level	Cluster 2 (N=260) *Offensive Improvements* level	Cluster 3 (N=385) *Defensive Additions* level
Strategic Launch Decisions			
- Product innovativeness	more innovative	more innovative	equally/less innovative
- Product newness	completely new	improvements	additions to line
- Product life cycle stage	introduction stage	maturity stage	growth/maturity stage
- Number of competitors		0	≥ 4
- Driver of NPD	technology-driven	mix market/technology	mainly market
- Objectives	foothold in new market	barriers for competition	expanding the product range barriers for competition increase market penetration lower costs possible capitalizing on existing market
Tactical Launch Decisions			
- Branding strategy	new brand/company name		brand extension
- Product assortment breadth	broader	broader	equal/smaller
- Distribution channels	new channels	current channels	both new and current
- Distribution expenditures	less	more	same
- Price level	higher	higher	equal/lower
- Pricing strategy	skimming	skimming	penetration/other
- Communication channels		customer promotion tv-advertising	customer promotion salesforce promotion

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulation

decisions associated with the three clusters some additional findings were found as well. *Technological Innovations* launches were given new brand names or branded with the company name whereas *Defensive Additions* introductions were more often brand extensions. While products launched with a *Technological Innovations* strategy were launched through new distribution outlets with lower distribution expenditures than competing products, *Offensive Improvements* were distributed through existing channels with higher expenditures. *Defensive Additions* used both current and new distribution channels and had approximately the same distribution expenditures as competing products.

Whether one or another of these launch strategies is 'better' is investigated next by linking new product performance to the strategies.

6.2.5   *Performance implications of the generic launch strategies*

Respondents rated the performance of each introduction on 15 project-level indicators of new product performance (Griffin and Page, 1993). Gathering data on these indicators provided the opportunity to analyze the performance differences of the three generic launch strategies at three levels:

- on the 15 individual indicators of new product performance;
- on overall performance (i.e., the mean of the 15 performance indicators); and
- on the dimensions of new product performance.

First, the dimensions of new product performance will be investigated for the products in the present sample. Then, the performance of the generic launch strategies will be compared on the different performance measures and dimensions.

Dimensions of new product performance. Different indicators are important for judging new product performance (see Chapter Four). This observation necessitated the search for a mechanism that drives these differences. A principal components analysis was conducted on the scores on the 15 performance indicators to assess the extent to which the judgments for the new products shared a common structure. All analyses were done on a partial correlation matrix controlling for the success status of the product introduction.[4] The resultant solution was purified by deleting indicators with significant cross-loading (i.e., indicators with loadings greater than .30 on more than one factor) and indicators with low communalities (<.50). Table 6.6 provides the solution after the purification process. The original solution with the 15 performance indicators included is presented in Appendix 6A.

The respondents in the present study appeared to characterize new product performance by three dimensions, namely market acceptance (3 items, $\alpha = .86$), financial performance (3 items, $\alpha = .79$) and product performance (2 items, $r = .76$). This three-factor solution accounted for 88.7% of the variance in the performance indicators.[5] The three dimensions are similar to the

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[4] A principal components analysis without controlling for the success status of the introductions extracted only one factor explaining 65.3% of the variance in the performance data. This factor which received an eigenvalue of 9.8 should be viewed as a general factor (Nunnally, 1978) that only expresses whether the product was a success or a failure.

[5] Multiple regression analyses showed that the performance dimensions highly impacted the success status of the introduction; all correlations were significant at $p < .0001$. The market acceptance dimension accounted for the largest part of the variance (73%). Financial performance added an additional 4%. Product performance did not contribute to the percentage of explained variance. An additional discriminant analysis showed that the three dimensions correctly classified 97% of the introductions as either successful or unsuccessful.

three project-level dimensions of new product performance suggested by Griffin and Page (1993), although seven indicators identified by them did not appear in the present factor solution. The reason for this is that the seven indicators loaded on more than one factor simultaneously and thus were removed in the purification process. Because a factor solution with doubly loading indicators has undesirable properties for further analyses, the three dimensional solution with the eight indicators was preferred over the solution with the 15 indicators suggested by Griffin and Page (1993). However, the content of the present factor solution was identical to Griffin and Page's (1993) solution when only the eight indicators were considered.

Table 6.6: Factor structure for the new product performance measures*

Indicators	Factor Loadings	Communality
Factor 1: Market Acceptance (λ=3.3, 41.5%)		
Revenue growth goals	.96	.93
Unit sales goals	.96	.95
Revenue goals	.90	.87
Factor 2: Financial Performance (λ=2.3, 28.2%)		
IRR/ROI goals	.93	.92
Break even time	.89	.85
Attain margin goals	.89	.74
Factor 3: Product Performance (λ=1.5, 19.0%)		
Launched on time	.93	.91
Speed to market	.93	.91

* After principal components analysis and varimax rotation. Eigenvalue and percentage of variance explained appear after the factor name. All analyses were done on a partial correlation matrix controlling for the outcome status of the introduction: successful or unsuccessful. The resultant solution was purified by deleting doubly loading variables (>.30 on more than one factor) and variables with low communalities (<.50).

Performance implications of the launch strategies. Several analyses were conducted to assess the performance implications of the three generic launch strategies. First, the proportion of successful new products within each cluster was identified. Then, the average ratings on the 15 performance indicators representing new product performance were calculated, as well as overall performance (i.e., the mean of the 15 indicators). Finally, the performance of the strategies was compared on the three dimensions of new product performance. The proportion of successes,

overall performance, the average ratings on the 15 performance indicators and the ratings on the three dimensions of new product performance are presented in Table 6.7.

Table 6.7: Generic launch strategies and new product performance

Performance Measure	Cluster 1 N = 298 Technological Innovations	Cluster 2 N = 260 Offensive Improvements	Cluster 3 N = 385 Defensive Additions	$p < .05$
Overall Success Ratio (59.0%)	55.7%	71.5%	52.7%	2>1,3
Overall Performance (3.9)	4.3	4.7	3.9	1,2>3; 2>1
Market Acceptance (4.0)	3.8	4.4	3.8	2>1,3
- Revenue goals (4.0)	3.8	4.6	3.8	2>1,3
- Unit sales goals (4.0)	3.8	4.4	3.8	2>1,3
- Revenue growth goals (3.9)	3.7	4.3	3.7	2>1,3
Financial Performance (3.9)	4.0	4.3	3.5	1,2>3
- Margin goals (4.2)	4.4	4.6	3.7	1,2>3
- Break-even time (3.8)	3.8	4.3	3.5	1,2>3; 2>1
- IRR/ROI goals (3.7)	3.8	4.2	3.4	1,2>3
Product-Level Performance (4.1)	4.2	4.7	3.6	1,2>3; 2>1
- Launched on time (4.2)	4.4	4.8	3.8	1,2>3; 2>1
- Speed to market (3.9)	4.0	4.5	3.5	1,2>3; 2>1
Additional Indicators				
- Product performance level (5.3)	5.3	5.6	5.0	1,2>3
- Quality guidelines (5.2)	5.1	5.5	5.0	2>1,3
- Customer satisfaction (5.0)	5.0	5.5	4.8	2>1,3
- Customer acceptance (4.7)	4.7	5.1	4.5	2>1,3
- Development costs (4.1)	4.3	4.7	3.5	1,2>3
- Profitability goals (4.0)	3.9	4.6	3.8	2>1,3
- Market share goals (3.9)	3.8	4.4	3.6	2>1,3

Note: All F-tests were significant at the $p < .01$ level. Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true N per ANOVA varies because of missing values. The last column indicates the Post-hoc Scheffé test of significance to control for multiple comparisons. Entries within parentheses refer to the total sample.

Success ratio. A one-way analysis of variance on the proportion of successes per cluster revealed a significant effect of cluster membership (F(2,940) = 12.52; p < .0001). A post-hoc Scheffé test showed that the percentage of successful new products for the *Offensive Improvements* strategy was significantly higher than for the other clusters at p < .05. Of the 260 products belonging to the *Offensive Improvements* cluster, 71.5% belonged to the successful performance category versus an average success rate of 59% for the entire sample.

Performance criteria and dimensions. The performance of the *Offensive Improvements'* strategy was the highest across the three generic strategies on all 15 performance criteria and significantly the highest for the following eleven criteria: revenue goals, unit sales goals, revenue growth goals, break-even time, launched on time, speed to market, meeting quality guidelines, customer satisfaction, customer acceptance, profitability goals and market share goals. In addition, overall performance ratings and the ratings on two dimensions of new product performance (i.e., market acceptance and product performance) for the *Offensive Improvements* strategy were also statistically the highest among the three strategies. Therefore, this strategy stands out as the most appropriate for new product launches where the goal is to maximize new product performance, regardless of the way in which that construct is operationalized.

Technological Innovations' performance criteria did not significantly differ from the *Offensive Improvements'* ratings on margin goals, IRR/ROI goals, product performance level, development costs, and on the financial performance dimension. This strategy is never as successful in the market, nor is their market acceptance ever statistically higher than for the *Defensive Additions'* strategy. However, seven *Technological Innovations'* ratings were statistically higher than those for the *Defensive Additions:* margin goals, break-even time, IRR/ROI, launched on time, speed to market, product performance level, and development costs. Apparently, the *Technological Innovations* strategy was more successful than the *Defensive Additions* strategy when product performance or financial goals needed to be met. In contrast, none of these measures refers to the market acceptance dimension. Therefore, when the objective is to gain a high level of market acceptance, the *Defensive Additions* strategy performs just as well as the *Technological Innovations* strategy. The same conclusions can be drawn when the overall ratings and the aggregated ratings on the three dimensions of new product performance are considered. *Technological Innovations* received higher ratings than the *Defensive Additions* on the overall, product and financial performance dimensions but not on the market acceptance dimension.

6.2.6   The generalizability of the generic launch strategies

The present study collected data on consumer and industrial new products that were launched in three different countries. By contrasting the use of the three launch strategies with product-type and country of introduction, it can be assessed for which products and in which countries the different generic launch strategies are used. Table 6.8 presents the results from these cross-tabulations.

Table 6.8: The clusters interpreted with background characteristics

	Cluster 1 (N=298) *Technological Innovations*	Cluster 2 (N=260) *Offensive Improvements*	Cluster 3 (N=385) *Defensive Additions*	Test Statistic
Country Product was Introduced				
- The Netherlands (23%)	**46%**	23%	5%	$\chi^2(4)= 383.1; p < .0001$
- U.S.A. (26%)	**34%**	**45%**	8%	
- U.K. (51%)	20%	33%	**87%**	
Main Served Market				
- Consumer (43%)	31%	48%	50%	$\chi^2(2) = 28.5; p < .0001$
- Industrial (57%)	**69%**	52%	50%	

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. Entries within parentheses refer to the percentage of the total sample.

The clusters significantly differed with respect to both characteristics. Products that were introduced in The Netherlands or in the U.S.A. were usually launched with a *Technological Innovations* strategy or an *Offensive Improvements* strategy whereas for products that were launched in the U.K. usually a *Defensive Additions* strategy was employed. In addition, the *Technological Innovations* strategy was more often used for industrial products.

These findings and the differences noted in Tables 5.5 and 5.6 suggest that launch strategies for consumer and industrial products and among countries of introduction may vary. Therefore, Chapter Seven will investigate launch strategy and performance differences and similarities between consumer and industrial products. Chapter Eight focuses on differences and similarities in launch strategies and performance among different countries of introduction.

6.3 Conclusions and Implications

The present chapter set out to identify jointly-determined combinations of strategic and tactical new product launch decisions and examined performance outcomes across different generic launch strategies. The findings suggest that several strategic and tactical launch decisions are interrelated. That is, choosing a particular newness strategy for a new product development project may hint at the appropriate pricing tactic that should be implemented. Conversely, if a particular distribution tactic has been decided upon at the outset of a product development project (e.g., for historical reasons), then that tactic may dictate the appropriate strategy in the product newness launch dimension for the project.

The present chapter derived three generic launch strategies that managers seem to use by clustering the associations among strategic and tactical launch decisions for 1,022 new product introductions: *Technological Innovations, Offensive Improvements* and *Defensive Additions.* These three generic launch strategies are descriptions of discernible sets of associated launch decisions that managers make. They indicate a consistency across managers in the way in which new products are launched.

The *Technological Innovations* strategy launches technology-based completely new products early in the product life cycle to establish a foothold in a new market. Tactical launch decisions associated with this strategy are broad assortments, new (to the firm) distribution channels and brand names, lower distribution expenditures, and high-price skimming strategies. The performance implications of this strategy are moderate. About 56% of these launches were successful, compared with 59% for the full sample. Product performance and financial goals were better met with this strategy than market acceptance goals. This strategy was most often used to launch industrial products in The Netherlands and in the U.S.A..

Offensive Improvements launches describe how products are launched when improvements on current products are injected into markets with few competitors to put up competitive barriers. Tactical launch decisions associated with the *Offensive Improvements* strategy are broad assortments, current distribution channels, higher distribution expenditures, higher prices, and the use of customer promotion and tv-advertising. These new product launches were the most successful, regardless of the way in which new product performance was operationalized. This strategy was most often used for introductions in the U.S.A..

The *Defensive Additions* strategy launches market-driven less-innovative additions to existing lines for defensive purposes later in the product life cycle in a market where many competitors are present. This strategy received the lowest performance ratings across nearly all performance criteria and was most often used for introductions in the U.K..

The generic strategy for launching technological innovations appears to describe the *how* for launching the classic technology-driven new-to-the-world product development project in the Booz, Allen and Hamilton typology (1982). New-to-the-world projects establish new markets, so by definition they are introduced in the early stages of a product's life cycle and their purpose is to establish a foothold in this new market. However, new-to-the-world products need not be technology-driven. They may be market-driven, as with the Sony Walkman. Thus, while the strategy defined here may obtain for those radical new products that came out of a technology development effort, the results do not show how managers launch market-driven, new-to-the-world products, which none-the-less use more off-the-shelf technology. Market-driven new-to-the-world products may require a different set of tactical decisions. One reason launch tactics should differ between these two product types may be because market-driven products cannot depend upon technology for protection against competitive entry like technology-driven products can. It can be speculated that perhaps a market-driven new-to-the-world product would be more successful with, for example, lower prices and a penetration pricing strategy rather than a high-price skimming strategy. The results provide insight only into how some new-to-the-world products are launched, not all new-to-the-world products.

The Booz, Allen and Hamilton (1982) typology which divides product development projects into six categories based upon the combinations of their 'newness to the market' and 'newness to the firm', is frequently the single means by which academics and practitioners describe the portfolio of product development projects firms commercialize. Products frequently are categorized into this typology without identifying other strategic variables that may go along with product newness. The present chapter suggests that understanding the appropriateness of overall launch strategies may require identifying additional strategic dimensions for new product development.

The other two generic launch strategies identified map rather well how firms might launch additions to existing lines and product improvement projects, when those product types are launched into particular strategic environments. The offensive improvement launch strategy applies to those product improvements launched to add new competitive barriers during the more mature phase of the life cycle when there are few competitors. An example of this situation is the initial launch of the Taurus, Ford's product improvement for the family sedan segment which combined new aerodynamic skin design technologies with a set of market-driven features. The tactics employed by managers in these types of product improvement situations, especially higher prices and skimming pricing policies, are unlikely to be appropriate for improvements launched into the PC market, where many competitors exist, and the improvements are more technology-driven than market-driven. PC improvements, at this point in time may be more defensive (keeping equal) than offensive.

The strategic situation for the defensive additions launch strategy are reminiscent of what occurs in the ready-to-eat cereal market. For example, Cheerios, an oat-based cereal, competes against a large number of brands. To increase market penetration, General Mills has added several line extensions, one at a time, over the last several years. All these extensions receive heavy customer promotions, use extensions of the original brand name, and are introduced as a small assortment of products.

The present chapter provided insight on how managers launch three types of projects from the six delineated by the Booz, Allen and Hamilton typology into particular strategic situations, and links those launches to new product performance. In summary, the results suggest that product development strategies are far more complex than just identifying product newness, and that several dimensions are needed to determine the overall launch strategy for a new product. Managers do seem to be consistent in the sets of options they use for different generic launch strategies, and the different strategies are associated with different levels of new product performance. Because of the incomplete nature of previous research, an exploratory approach was used which included many variables in the analysis. Over half showed associations in the decision-making process, demonstrating that launch decisions indeed are complex and multifaceted.

The data analyzed in the present chapter were gathered for two different product types: consumer and industrial new products. Industrial new products tend to be technologically complex, and often require large R&D investments. In addition, industrial customers usually have more expertise, buy more rationally and use the product in further manufacturing processes. Given these differences, one might expect differences in the launch strategies that companies employ for their new products. For example, changing from a business-to-business to a consumer market may effect the findings for product newness and innovativeness, branding, distribution, and especially the promotion decisions. Crosstabulating the three generic launch strategies with the main served market resulted in a statistically significant difference. Therefore, launch strategies and performance levels will be compared between consumer and industrial products in Chapter Seven. In addition, the data analyzed in this chapter were gathered from firms in The Netherlands, the U.K. and the U.S.A.. However, because management principles, standards and styles and customer desires and needs differ around the world, appropriate actions from and links among strategic and tactical decisions associated with new product launches may differ depending upon the country where the new product was introduced. Crosstabulating the three generic launch strategies with the country where the new product was introduced resulted in a statistically significant difference. Therefore, the global applicability of both the associations across decision making levels and performance relationships need to be addressed. This research endeavor will be conducted in Chapter Eight.

7. LAUNCH STRATEGIES FOR CONSUMER AND INDUSTRIAL PRODUCTS: AN EMPIRICAL COMPARISON

7.1 Introduction

The analyses in Chapter Six were based on the total sample of new products. This sample included consumer and industrial new products. Crosstabulating the three generic launch strategies for new products with the market into which these new products were introduced revealed a statistically significant relationship. Therefore, it may be expected that consumer and industrial new products are launched in different ways.

With respect to the strategic launch decisions, the results from Chapter Six suggest that industrial new products are more often innovative performance improvements launched by technological innovators to use new technologies or to establish a foothold in a new market. In addition, the following tactical launch decisions probably guide the launch of *industrial* products: A new brand name or the company name, new channels of distribution, low distribution expenditures and a skimming pricing strategy. On the other hand, *consumer* products are probably more often market-driven improvements or additions to existing lines launched with a brand extension strategy to expand the current product range or to capitalize on an existing market. The present chapter will focus on these differences in launch decisions and strategies between consumer and industrial new products.

Section 7.2 discusses the sample of products and respondents. The next section presents several differences in strategic and tactical launch decisions between consumer and industrial new products. Given these differences, the analyses from Chapter Six were repeated for the consumer and industrial sample separately. The purpose of this exercise was to investigate differences and similarities between consumer and industrial launch strategies. Section 7.4.1 deals with the findings for the consumer products, section 7.4.2 for the industrial products and section 7.4.3 compares the findings for the consumer and industrial products. Finally, section 7.5 draws conclusions and discusses implications.

7.2 Method

The mail survey instrument that was discussed in Chapter Five was used to collect launch decision and performance data about both consumer and industrial new products that had been launched into the market within the last five years. An identical procedure guided data collection

in The Netherlands, the U.K. and the U.S.A.. Industries included in the sample were consumer durables, packaged goods, construction/installation, transport/communication, and chemicals. The consumer durables and packaged goods were mainly launched in the consumer market whereas the other three product categories were mainly launched in industrial markets.

The sample of Dutch managers represented 155 companies or business units. Respondents provided data on 91 (38%) consumer and 148 (62%) industrial new products that their company had launched since 1989. The 292 U.K. respondents provided data on 260 (53%) consumer and 231 (47%) industrial new products. In the U.S.A. 175 managers responded to the questionnaire. The 175 U.S. managers provided data on 288 new products of which 91 (32%) were launched in the consumer market and 197 (68%) in industrial markets.[1]

The analyses in the present chapter concern the total sample, as it splits into consumer and industrial subsets. Table 7.1 presents the composition of this sample and summary statistics. The 617 firms or business units provided data on 1,018 new products[2] (43% consumer and 57% industrial), of which 595 (58%) were designated by the respondent as successful and 423 (42%) as unsuccessful.

Table 7.1: Sample composition and summary statistics

	Consumer products	Industrial products	Total sample
number of firms	257	360	617
number of products	442	576	1018
number of successes	250	345	595
number of failures	192	231	423
success rate (% success)	57%	60%	58%
overall performance*	4.3	4.2	4.3
% of sales by new products	48%	47%	47%
% of profits by new products	44%	42%	43%

*   Mean of the 15 performance criteria with '1' = 'did not meet criteria at all' and '7' = 'met criteria completely'

[1] The percentage of successful new products did not differ significantly between the consumer and industrial samples in the three countries. The statistics for these crosstabulations were: χ^2 (1) =.15; p = .69 for The Netherlands, χ^2 (1) = 1.49; p = .22 for the U.K, and χ^2 (1)=.16; p = .69 for the U.S.A..

[2] For four new product introductions in The Netherlands, it was not clear whether these were launched in consumer or in industrial markets. Therefore, these products were excluded from the analyses.

The proportion of success and overall performance (the mean of the 15 performance indicators) did not differ significantly between the consumer and industrial samples. In addition, consumer and industrial product firms were equally dependent on new products. For both samples, new products (i.e., products introduced in the last five years) generated about 47% of company sales and 43% of company profits. Therefore, new products are critical for the well-being of consumer and industrial product firms alike.

7.3 Differences in launch decisions between consumer and industrial products

This section, which investigates whether consumer and industrial new products are launched in different ways, has been divided into two parts. The first part investigates differences in *strategic* launch decisions between consumer and industrial products (testing Hypothesis 3_A). Then, differences in *tactical* launch decisions between consumer and industrial products are discussed (testing Hypothesis 3_B).

Strategic Launch Decisions
To test Hypothesis 3_A which stated that strategic launch decisions differ between consumer and industrial new products, all 21 strategic launch decisions were crosstabulated with type of product, consumer versus industrial. Table 7.2 contains the results of these crosstabulations. Fourteen out of the 21 tests showed a statistically significant relationship between type of product and strategic launch decisions at $p < .05$. This result strongly suggests that strategic launch decisions differ for consumer and industrial products. Therefore, Hypothesis 3_A was supported.

The strategic part of the launch strategy for both types of products can be characterized in meaningful ways. In line with expectations, consumer products were more often (in comparison with the industrial products):

- equally innovative as competitors' efforts;
- new product lines or additions to an existing line;
- incremental improvements;
- targeted at a mass-market;
- introduced in a market with moderate growth;
- launched by fast imitators;
- mainly market driven;
- launched with the objectives of:
  - expanding the product range,

Table 7.2: Strategic launch decisions for consumer and industrial products

	Consumer Products N = 442*	Industrial Products N = 576*	Total Sample N = 1018*	Test-statistic
Product innovativeness				
- more innovative	38%	**49%**	44%	$\chi^2(2)=21.2$;
- equally innovative	**56%**	42%	48%	$p<.0001$
- less innovative	6%	9%	8%	
NPD cycle time				
- less than 6 months	7%	7%	7%	$\chi^2(3)=1.2$;
- 6 months - 1 year	24%	27%	26%	$p=.75$
- 1 - 3 years	49%	47%	48%	
- more than 3 years	20%	19%	20%	
Product newness				
- completely new	11%	**16%**	14%	$\chi^2(5)=36.8$;
- new product line	**36%**	26%	30%	$p<.0001$
- addition to line	**37%**	31%	34%	
- improvement	12%	**21%**	17%	
- repositioning	4%	3%	3%	
- lower cost	1%	**3%**	2%	
Perception customers				
- incremental improvement	**46%**	26%	34%	$\chi^2(2)=46.9$;
- performance improvement	45%	**63%**	55%	$p<.0001$
- never seen before	9%	12%	11%	
Targeting strategy				
- niche	20%	**29%**	25%	$\chi^2(2)=12.7$;
- selective	46%	46%	46%	$p<.01$
- mass-market	**34%**	25%	29%	
Market growth rate				
- less than 0%	5%	7%	6%	$\chi^2(3)=14.5$;
- 0% - 5%	44%	43%	43%	$p<.01$
- 5% - 10%	**37%**	29%	32%	
- more than 10%	14%	**22%**	18%	
Stage of the PLC				
- introduction	12%	18%	15%	$\chi^2(3)=6.9$;
- growth	39%	36%	38%	$p=.08$
- maturity	45%	43%	44%	
- decline	3%	3%	3%	
Market competitiveness				
- not one competitor	14%	16%	15%	$\chi^2(2)=0.8$;
- 1 to 3 competitors	44%	42%	43%	$p=.69$
- ≥ 4 competitors	42%	42%	42%	
Timing strategy				
- technological innovator	39%	**49%**	45%	$\chi^2(2)=10.4$;
- fast imitator	**54%**	45%	49%	$p<.01$
- cost reducer	7%	6%	6%	
Driver of NPD				
- completely market	5%	5%	5%	$\chi^2(3)=13.1$;
- mainly market	**57%**	45%	50%	$p<.01$
- mix market/technology	26%	**34%**	31%	
- mainly technology	12%	16%	14%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Table 7.2: Strategic launch decisions for consumer and industrial products (continued)

	Consumer Products N = 442*	Industrial Products N = 576*	Total Sample N = 1018*	Test-statistic
Objectives				
- expand product range	**80%**	71%	75%	$\chi^2(1)=11.2; p<.001$
- increase penetration	68%	63%	65%	$\chi^2(1)=2.9; p=.09$
- utilize existing market	**58%**	51%	54%	$\chi^2(1)=5.2; p<.05$
- barriers for competition	**50%**	37%	42%	$\chi^2(1)=18.7; p<.0001$
- utilize new technology	24%	**39%**	32%	$\chi^2(1)=26.1; p<.0001$
- lower costs possible	25%	30%	28%	$\chi^2(1)=3.3; p=.07$
- increase company's image	**31%**	24%	27%	$\chi^2(1)=5.6; p<.05$
- foothold in new market	19%	**26%**	23%	$\chi^2(1)=7.1; p<.01$
- emerging market segment	19%	17%	18%	$\chi^2(1)=0.4; p=.53$
- utilize excess capacity	**20%**	10%	15%	$\chi^2(1)=20.3; p<.0001$
- extend seasonal cycle	7%	5%	6%	$\chi^2(1)=2.6; p=.10$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

- capitalizing on an existing market,

- putting up barriers for the competition,

- improving company's image, and

- using excess capacity.

In contrast, industrial products were more often:

- more innovative than competitors' efforts;

- completely new or an improvement;

- an attempt at lowering costs;

- performance improvements;

- targeted at a niche;

- introduced in high-growth markets;

- launched by technological innovators;

- driven by a market-technology mix;

- launched with the objectives of
  - capitalizing on a new technology, and
  - establishing a foothold in a new market.

Equally interesting as the differences between strategic launch decisions for consumer and industrial products are the strategic launch decisions that were independent of product type. These strategic launch decisions were (at $p > .10$): NPD cycle time, market competitiveness, and

the objectives: preempting an emerging market segment and offsetting a seasonal cycle. Since new products were infrequently launched with both objectives (i.e., in 18% and 6% of the cases), the first two decisions are most relevant. It appears that consumer and industrial new products take equally long to develop and are launched in markets with similar numbers of competitors. However, apart from these two variables, there are marked differences between consumer and industrial product launches when strategic launch decisions are considered.

Since it has previously been shown that strategic and tactical launch decisions are related (see Chapter Six), it can be expected that those tactical launch decisions that were associated with the strategic launch decisions will also differ between consumer and industrial products. The previous chapter showed, for example, that the strategic decisions managers make regarding the driver of NPD and product innovativeness were associated with tactical launch decisions dictating the pricing strategy and the use of customer promotion (see Table 6.1). Because strategic launch decisions regarding the driver of NPD and product innovativeness differed between consumer and industrial products, it may be expected that pricing strategies and the use of customer promotion will also differ between both product types.

Tactical Launch Decisions

To test Hypothesis 3_B which stated that tactical launch decisions differ between consumer and industrial products, the seven tactical launch decisions and the reported use of ten marketing communications instruments were crosstabulated with product type. Table 7.3 contains the results of these crosstabulations.

As predicted above, all but four tactical launch decisions differed between both product types, supporting Hypothesis 3_B. The 13 significant differences out of 17 tests strongly suggest that consumer and industrial product launches differ with regard to the tactical launch decisions concerned. The results showed that consumer products were more often (in comparison with the industrial products):

- launched in an equally broad assortment as competitive products;
- brand extensions;
- distributed through current distribution channels;
- launched with similar distribution expenditures as competitive products;
- launched while using more of the following marketing communications instruments:
  - trade promotion,
  - customer promotion,
  - print-advertising,
  - tv-advertising, and
  - radio-advertising.

Table 7.3: Tactical launch decisions for consumer and industrial products

	Consumer Products N = 442*	Industrial Products N = 576*	Total Sample N = 1018*	Test-statistic
Breadth of assortment				
- broader	27%	**32%**	30%	$\chi^2(2)=8.6$;
- equally broad	**53%**	43%	47%	$p<.05$
- smaller	21%	25%	23%	
Branding strategy				
- new brand name	30%	31%	31%	$\chi^2(3)=26.4$;
- brand extension	**43%**	31%	36%	$p<.0001$
- company name	26%	**32%**	29%	
- generic / no brand	2%	**6%**	4%	
Distribution channels				
- current channels	**80%**	74%	77%	$\chi^2(2)=10.2$;
- new channels	3%	**7%**	5%	$p<.01$
- both current / new	17%	19%	18%	
Distribution expenditures				
- higher	17%	16%	17%	$\chi^2(2)=8.4$;
- about the same	**71%**	65%	67%	$p<.05$
- lower	12%	**19%**	16%	
Price level				
- higher	27%	32%	30%	$\chi^2(2)=3.2$;
- about the same	45%	39%	42%	$p=.20$
- lower	28%	29%	28%	
Pricing strategy				
- skimming	26%	**34%**	31%	$\chi^2(2)=7.7$;
- penetration	45%	41%	43%	$p<.05$
- other	30%	25%	27%	
Promotion expenditures				
- higher	24%	24%	24%	$\chi^2(2)=1.5$;
- about the same	49%	45%	47%	$p=.48$
- lower	28%	31%	40%	
Communication channels				
- salesforce promotion	77%	78%	77%	$\chi^2(1)=0.2$; $p=.66$
- **trade promotion**	**76%**	66%	70%	$\chi^2(1)=11.7$; $p<.001$
- **customer promotion**	**76%**	35%	53%	$\chi^2(1)=168.4$; $p<.0001$
- **personal selling**	43%	**56%**	50%	$\chi^2(1)=17.2$; $p<.0001$
- **direct marketing**	27%	**44%**	36%	$\chi^2(1)=28.4$; $p<.0001$
- **print-advertising**	**37%**	31%	34%	$\chi^2(1)=4.8$; $p<.05$
- **public relations**	29%	**35%**	33%	$\chi^2(1)=3.9$; $p<.05$
- trade shows	14%	12%	13%	$\chi^2(1)=0.6$; $p=.45$
- **tv-advertising**	**20%**	1%	9%	$\chi^2(1)=111.3$; $p<.0001$
- **radio-advertising**	**10%**	2%	5%	$\chi^2(1)=35.1$; $p<.0001$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

In contrast, industrial products were more often:

- launched in a broader assortment than competitors';
- branded with the company name or generic;
- distributed through new channels;
- launched with lower distribution expenditures than competitive products;
- skimming-priced;
- launched while using more of the following marketing communications instruments:
  - personal selling,
  - direct marketing, and
  - public relations.

Four tactical launch decisions including the reported use of two marketing communications instruments did not significantly differ between the consumer and industrial samples (at $p > .10$): relative price level, relative promotion expenditures and the use of salesforce promotion and trade shows. For example, both consumer and industrial product firms use salesforce promotion in about 75% of the cases to communicate and promote the existence of a new product to distributors and end users.

In addition, it is interesting that two similarities involve prices and expenditures: relative price level and relative promotion expenditures. The previous chapter suggested that relative price level was interrelated with the number of competitors on the market (see Table 6.1). Since the level of market competitiveness did not differ between consumer and industrial launches (see Table 7.2), it may not be so surprising that relative price level also did not differ between both product types. On average, however, there were marked differences between consumer and industrial product launches when tactical launch decisions are considered.

Taken together, the results of the separate analyses of strategic and tactical launch decisions showed that launch decisions for consumer and industrial products differ in statistically significant and conceptually meaningful ways.[3] The similarities between the findings in this section and the three generic launch strategies derived in Chapter Six are large. Industrial new products were launched with a set of launch decisions that resembles the *Technological Innovations* strategy while consumer products are launched with a set of launch decisions that is comparable to the *Defensive Additions* strategy. However, it is unrealistic to assume that

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[3] To help strengthen the generalizability of the reported results, it was also checked whether each of the three country samples displayed the same patterns of results as presented in Tables 7.2 and 7.3. The results clearly showed that the three country samples replicated most relationships between type of product and strategic and tactical launch decisions that were revealed by the total analysis. Appendices 7A to 7F contain the results of these analyses for the three country-samples.

consumer and industrial products are launched with just one specific launch strategy. Therefore, the analyses from Chapter Six were repeated for the consumer and industrial sample separately. The findings from these analyses are provided below.

7.4   Towards a typology of consumer and industrial new product launch strategies

The analyses in section 7.3 showed that there are several differences in launch decisions between consumer and industrial products. Fourteen (out of 21) strategic and thirteen (out of 17) tactical launch decisions differed significantly between both samples at $p < .05$. To investigate whether launch strategies also differ between consumer and industrial products, the analyses from Chapter Six (i.e., canonical correlation and cluster analysis) were repeated for the consumer and industrial sample separately. Section 7.4.1 deals with the findings for the consumer products and section 7.4.2 for the industrial products. Section 7.4.3 will test Hypothesis 3_C by comparing the canonical structures derived for the consumer and industrial products.

7.4.1   A typology of launch strategies for new consumer products

The data for the 442 consumer products were organized into a set of 21 strategic launch decisions, a set of 17 tactical launch decisions and a set of 15 indicators of new product performance. Canonical correlation analysis was used to investigate which sets of strategic and tactical launch decisions were associated. Subsequently, cluster analysis was used to determine whether consumer product firms systematically employed these sets of interrelated launch decisions. Finally, the performance implications of the launch strategies for consumer products were investigated.

7.4.1.1 Associations between the sets of strategic and tactical launch decisions

Canonical correlation analysis was used to investigate the associations between the sets of strategic and tactical launch decisions for the consumer products. From a total of 442 consumer products, 23 products were removed since these introductions contained missing data values in both sets of variables. Therefore, the canonical correlation analysis was performed on the remaining 419 product introductions. Given the exploratory nature of the investigation, an adequate solution was sought by inspecting one to four-dimensional solutions. Similar to the

findings for the total data set in Chapter Six, a two-dimensional solution described the data structure best.[4] Table 7.4 summarizes the results for the two-dimensional solution.

The fit of this two-dimensional solution was 1.70 out of a maximum of 2. In addition, the eigenvalues of both dimensions (0.87 and 0.83) and the canonical correlation coefficients (0.74 and 0.66) were high. Therefore, for the consumer products, two sets of interrelated launch decisions can be distinguished.

Dimension one. The first dimension suggests that the way in which managers make strategic launch decisions regarding the number of competitors, stage of the PLC, driver of NPD, product innovativeness and with regard to six objectives (putting up competitive barriers, producing existing products at lower costs, capitalizing on an existing market, increasing the company's image, preempting an emerging market segment and expanding the product range) are associated with tactical launch decisions dictating the relative price level, pricing strategy, and the use of salesforce promotion, customer promotion and public relations. The most important strategic launch decisions in deriving the canonical variate refer to market development characteristics while the most important tactical launch decisions involve pricing and promotion tactics. Therefore, dimension one may be labeled 'price and promotion tactics over the product life cycle.'

The signs of the loadings on the dimensions provided the decision directions that were interrelated. For example, one set of associated launch decisions would include technology-driven, relatively more innovative, skimming-priced, new products launched in an early stage of the product life cycle with the use of public relations in a market where few competitors are present with the objectives to preempt an emerging market segment and to increase the company's image.

This configuration of strategic and tactical launch decisions postulates how tactical launch decisions should change over the different stages of the product life cycle (Brown, 1992; Cox, 1967; Day, 1981; Kotler, 1965; Levitt, 1969). In early stages of the product life cycle, few competitors are present in the market, a condition that facilitates the use of skimming pricing strategies (Kotler, 1994). An example of a recently introduced new product that was launched with a strategy resembling *Dimension one* is Philips' CD-I. This product was technologically advanced, high-priced and launched in an early stage of the emerging multimedia market (see, for instance, Peelen et al., 1996).

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[4] In the three-dimensional solution, all but one of the variables that loaded higher than 0.30 on the third dimension also loaded high on the first or second canonical dimension and in the four-dimensional solution the convergence test value had still not been reached after 100 iterations.

Table 7.4: Canonical component loadings for consumer products on two dimensions

Variable	Dimension 1 Loading	Category	Dimension 2 Loading	Category
Strategic launch decisions				
- number of competitors	**-.318**	**market**	**.553**	**market**
- stage of the PLC	**-.530**	**market**	-.021	
- put up barriers	**-.498**	**firm**	**-.309**	**firm**
- driver of NPD	**.483**	**firm**	.261	
- produce at lower costs	**-.442**	**firm**	.190	
- capitalize on market	**-.400**	**firm**	-.142	
- timing strategy	-.169		**.379**	**firm**
- NPD cycle time	-.253		**.378**	**product**
- product innovativeness	**-.374**	**product**	.105	
- targeting strategy	-.262		**.369**	**market**
- increase company's image	**.349**	**firm**	-.014	
- preempt segment	**.309**	**firm**	-.101	
- expand product range	**-.301**	**firm**	.096	
- utilize excess capacity	-.184		.269	
- increase market penetration	-.264		-.113	
- establish foothold	.262		.165	
- market growth rate	-.247		-.085	
- perception customers	.220		-.183	
- offset seasonal cycle	-.003		-.219	
- product newness	-.070		-.123	
- capitalize on new technology	.027		.060	
Tactical launch decisions				
- salesforce promotion	**-.559**	**promotion**	-.160	
- customer promotion	**-.531**	**promotion**	-.034	
- price level	**-.468**	**price**	.182	
- trade promotion	-.201		**-.452**	**promotion**
- public relations	**.432**	**promotion**	**.311**	**promotion**
- pricing strategy	**-.400**	**price**	**.354**	**price**
- promotion expenditures	-.042		**.373**	**promotion**
- breadth of assortment	-.093		**.372**	**product**
- branding strategy	-.246		**-.348**	**product**
- distribution expenditures	-.139		**.306**	**distribution**
- print-advertising	.261		-.045	
- tv-advertising	.199		-.176	
- trade shows	-.187		-.010	
- radio-advertising	.038		-.163	
- direct marketing	-.160		.114	
- personal selling	-.013		-.155	
- distribution channels	.088		-.135	
- eigenvalue	0.87		0.83	
- canonical correlation	0.74		0.66	

- Fit = 1.70 (out of 2)

Note: Component loadings > .30 are presented in bold

The opposite responses to those identified above suggest that firms may also launch market-driven less innovative penetration low-priced new products in competitive markets that are in a later stage of the product life cycle with the use of customer and salesforce promotion to put up competitive barriers, to produce existing products at lower costs, to capitalize on an existing market and to expand the product range.

Dimension two. The second dimension of interrelated strategic and tactical launch decisions suggests that strategic decisions managers make regarding the number of competitors, timing strategy, NPD cycle time, targeting strategy and the objective of putting up competitive barriers are associated with tactical launch decisions regarding the pricing strategy, promotion expenditures, breadth of product assortment, branding strategy, distribution expenditures and the use of trade promotions and public relations. The most important strategic launch decisions in deriving the second canonical variate refer to launch timing and target market selection while the most important tactical launch decisions involve promotion tactics, product tactics and marketing expenditures. Therefore, dimension two may be labeled 'promote and spend to target on time.'

The signs of the loadings portray a small assortment of penetration-priced new products which took relatively long to develop and that are launched with a differentiated imitation strategy in a market with many competitors present. Marketing spending for these new products is relatively low: Distribution and promotion expenditures were lower than competitors' marketing efforts and public relations is more often used to communicate the existence of the new product.

This configuration of interrelated launch decisions resembles the *imitate-and-improve* strategy proposed by Schnaars (1994). He suggested three imitation strategies that later entrants can use to seize markets from pioneers: lower prices, imitate-and-improve, and market power. The imitate-and-improve strategy attempts to improve upon the pioneer's design and focuses on customers that will prefer a superior product to early entry (Schnaars, 1994). A good example of a company that successfully implemented this strategy is Samsung in the market for microwave-ovens (Magaziner and Patinkin, 1988).

Conversely, the opposite responses suggest that firms may also launch swiftly developed new products with a niche strategy early in noncompetitive markets with the use of skimming strategies, company brand names, trade promotion and broad assortments while distribution and promotion expenditures tend to be higher than competitors'.

Eight strategic launch decisions, including five objectives, were not associated sufficiently with any of the tactical launch decisions across the two canonical dimensions: market growth rate, customer perceptions, product newness and the five objectives: using excess capacity, increasing market penetration, establishing a foothold in a new market, offsetting a seasonal

cycle and capitalizing on a new technology. In addition, seven of the tactical launch decisions, including the reported use of six marketing communications instruments, were independent of the strategies implemented earlier in the NPD process across the two canonical dimensions: the choice of distribution channels and the six marketing communications instruments: print-advertising, tv-advertising, trade shows, radio-advertising, direct marketing and personal selling.

To summarize, the canonical correlation analysis for the consumer products demonstrated that strategic and tactical launch decisions are interrelated. Thirteen (out of 21) strategic launch decisions and ten (out of 17) tactical launch decisions were sufficiently associated across the two canonical dimensions. Dimension one featured strategic launch decisions representing elements from the new product's product, market and firm strategies and tactical launch decisions dictating only pricing and promotion decisions. In contrast, dimension two featured the three strategic categories but also all four elements from the marketing mix.

The results suggest that pricing and promotion tactics are particularly associated with the stage of the product life cycle, the NPD driver, product innovativeness and several objectives whereas trade promotion, product tactics and marketing expenditures (i.e., promotion and distribution expenditures) are particularly associated with the number of competitors, timing strategy, targeting strategy and NPD cycle time. The strategic elements from the first dimension refer to different stages of market development while the strategic elements from the second dimension refer to launch timing and target market selection. Apparently, pricing tactics, public relations and customer and salesforce promotion are particularly associated with market development characteristics while trade promotion, product tactics and marketing expenditures are particularly associated to launch timing and target market selection.

7.4.1.2 In search of consumer launch strategies

Cluster analysis was used to determine whether consumer product firms systematically employed the two sets of interrelated strategic and tactical launch decisions. The cluster analyses were run on the standardized canonical variate scores (Punj and Stewart, 1983) for the 407 consumer products remaining after eliminating the 12 observations with values further than + or - 2.5 standard deviations from the mean (Hair et al., 1995). Since the canonical variate scores were uncorrelated ($r = -.04$, $p = .47$), the Euclidian distance measure was chosen to measure interobject similarity.

The dendograms resulting from the cluster analyses were visually inspected and the solutions using four different algorithms (Ward's method, complete linkage, average linkage and single linkage) were compared. Excessive chaining did only occur for the single linkage algorithm. Inspection of the other three dendograms (i.e., Ward's method, complete linkage and

average linkage) suggested a three or four-cluster solution. The coefficient of variation (Griffin, 1989) was calculated to assess a reasonable distribution of introductions across the clusters. In addition, multiple discriminant analysis with cluster membership as the grouping variable and the canonical variate scores as the predictor set was used to determine which algorithm classified most introductions correctly in the three or four clusters. The analyses suggested to choose Ward's three-cluster solution.[5]

Below, the three-cluster solution will first be interpreted in terms of the canonical variate scores and subsequently in terms of the salient original variables that entered the canonical correlation analysis (7.4.1.3). Then, the performance implications of the three consumer launch strategies will be discussed (7.4.1.4).

7.4.1.3 Interpreting the consumer launch strategies

The average canonical variate scores were calculated for the three clusters (see Table 7.5). Not surprisingly, one-way analyses of variance indicated that the average ratings on both canonical variates differed significantly among the clusters ($F(2,404) = 421.8$; $p < .0001$; $F(2,404) = 178.2$; $p < .0001$). Table 7.6 presents a crosstabulation of those launch variables that loaded higher than 0.30 on the first or second canonical dimension by cluster membership.

Table 7.5: Canonical variate scores for the three consumer clusters

	Cluster Name	Canonical Variate Score 1*	Canonical Variate Score 2*
Cluster 1 (N = 82)	High Price Innovations	0.84	-1.08
Cluster 2 (N = 129)	Technology Pushers	0.68	0.72
Cluster 3 (N = 196)	Market Driven Penetrations	-0.86	0.00

* One-way ANOVA; all means were statistically significant at $p < .0001$.

5 The coefficients of variation for the three cluster solution were: 0.42 (Ward's method), 0.73 (complete linkage), 0.42 (average linkage) and 1.71 (single linkage). For the four cluster solution, those statistics were: 0.45, 0.93, 0.50 and 1.97, respectively. The percentages of correctly classified products for the three cluster solution were 94.6% (Ward's method), 93.9% (complete linkage), 94.1% (average linkage) and 99.3% (single linkage). For the four cluster solution, those percentages were: 94.4%, 94.1%, 94.9% and 99.0%.

Table 7.6: A typology of consumer launch strategies

	Cluster 1 (N=82) *High Price Innovations*	Cluster 2 (N=129) *Technology Pushers*	Cluster 3 (N=196) *Market Driven Penetrations*
Decision	*level*	*level*	*level*
Strategic Launch Decisions			
- Product innovativeness	more innovative	more innovative	equally innovative
- NPD cycle time	less than 6 months		more than 3 years
- Stage of the PLC	introduction stage	introduction/ decline stage	maturity stage
- Targeting strategy	niche		selective
- Number of competitors	0	more than 4	more than 4
- Driver of NPD	mix market/ technology	technology	market
- Timing strategy	technological innovator		fast imitator
- Objectives	increase company image preempt emerging segment	preempt emerging segment	expand product range barriers for competition lower costs possible utilize existing market
Tactical Launch Decisions			
- Branding strategy		new brand name	brand extension
- Breadth of assortment	broader range	broader range	equally broad
- Distribution expenditures	more	less	same
- Price level	higher		equal/lower
- Pricing strategy	skimming		penetration
- Promotion expenditures	more	less	same
- Communication channels	trade promotion	public relations	trade promotion customer promotion sales promotion

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after cross-tabulation.

Cluster 1 (N=82) received a positive rating on the first and a negative rating on the second canonical variate (0.84, -1.08), producing a set of introductions that are relatively more innovative, swiftly developed, driven by technological capabilities as well as market needs, and launched by technological innovators in the introduction stage of the product life cycle in a niche market with few competitors present to preempt an emerging market segment and to enhance the company's image. Tactical launch decisions associated with this set of strategic launch decisions

are broad assortments, relatively high distribution and promotion expenditures, trade promotion, and a high-price skimming strategy. This strategy is labeled the *High Price Innovations* strategy.

Cluster 2 (N=129) received positive ratings on the first and second canonical variate (0.68, 0.72). This strategy is characterized by relatively more innovative, technology-driven, new products that are launched in the introduction or decline stage of the product life cycle while many competitors are present in the market with the objective of preempting an emerging market segment. Tactical launch decisions associated with these strategic decisions are broad assortments, new brand names, low distribution and promotion expenditures and the use of public relations. Given the apparent lack of marketing efforts this strategy is labeled the *Technology Pushers* strategy.

Cluster 3 (N=196) contained most introductions (48% of the cases) and received a negative rating on the first canonical variate and a score of zero on the second canonical variate (-0.86, 0.00). Therefore, this cluster of new products is characterized by equally innovative, slowly developed, market-driven new products that are launched by fast imitators in the maturity stage of the product life cycle in a selective market with more than four competitors present to expand the product range, to put up barriers for competition, to produce existing products at lower costs or to use an existing market. Tactical launch decisions associated with this cluster are an equally broad assortment of penetration-priced brand extensions that are launched with similar distribution and promotion expenditures as competing products. Marketing communications instruments that are more often used are trade, customer and salesforce promotion. This strategy is labeled the *Market Driven Penetrations* strategy.

Whether one or another of these launch strategies is 'better' is investigated next by linking new product performance measures to the launch strategies.

7.4.1.4 Performance implications of the consumer launch strategies

Several analyses tested the performance implications of the three consumer launch strategies (see Table 7.7). The proportion of successful new products, the mean ratings for each of the 15 performance indicators, and overall performance for each strategy were calculated. The performance of the three launch strategies was also compared on the three dimensions of new product performance derived in Chapter Six: market acceptance, financial performance and product performance.[6]

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[6] A principal components analysis on the 15 performance measures for the consumer products resulted in a solution that was highly comparable to the solution for the total sample. The factor structure of the new product performance measures for the consumer products is presented in Appendix 7G.

Table 7.7: Consumer launch strategies and performance implications

Performance Measure	Cluster 1 N = 82 High Price Innovations	Cluster 2 N = 129 Technology Pushers	Cluster 3 N = 196 Market Driven Penetrations	p<.05
Overall Success Ratio (56.8%)	63.4%	55.8%	54.6%	N.S.
Overall Performance* (4.3)	4.8	4.4	4.1	1>3
Market Acceptance (4.1)	4.4	4.1	3.9	N.S.
- Revenue goals (4.2)	4.6	4.2	4.0	1>3
- Unit sales goals (4.1)	4.4	4.1	3.9	N.S.
- Revenue growth goals (3.9)	4.2	4.0	3.8	N.S.
Financial Performance (3.9)	4.2	4.2	3.6	1,2>3
- Margin goals (4.1)	4.5	4.5	3.7	1,2>3
- Break-even time (3.9)	4.3	4.2	3.5	1,2>3
- IRR/ROI (3.7)	4.0	3.9	3.5	N.S.
Product Performance (4.3)	5.2	4.4	3.8	1>2>3
- Launched on time (4.4)	5.3	4.6	3.9	1>2>3
- Speed to market (4.1)	5.1	4.1	3.7	1>2,3
Additional Indicators				
- Customer satisfaction (5.1)	5.4	5.2	4.9	1>3
- Customer acceptance (4.8)	5.0	4.9	4.7	N.S.
- Market share goals (4.0)	4.5	3.9	3.8	1>3
- Profitability goals (4.1)	4.5	4.2	3.8	1>3
- Product performance (5.3)	5.8	5.3	5.1	1>3
- Meeting quality goals (5.2)	5.6	5.1	5.1	1>3
- Development costs (4.1)	5.0	4.4	3.6	1,2>3

Note: Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true N per ANOVA varies because of missing values. The last column indicates the Post-hoc Scheffé test of significance to control for multiple comparisons. Entries within parentheses refer to the total sample.
* Mean of the 15 performance criteria

The *overall success ratio* (i.e., the percentage of successful new products launched with a certain strategy) did not differ significantly among the three strategies (χ^2 (2) = 1.90; p = 0.39). Among 55% and 63% of the new products launched with the three strategies were successful. However, the overall performance level and 11 out of the 15 performance indicators proved to be statistically significant at $p < .05$, with several differences found according to the performance measure or dimension used. This finding agrees with recent publications suggesting a multidimensional view on new product performance (see Chapter Four).

One-way analyses of variance showed that a single market acceptance criterion was significantly different at $p < .05$. Post-hoc Scheffé tests showed that *High Price Innovations* received higher ratings on 'meeting revenue goals' than *Market Driven Penetrations*. No statistically significant differences were found among the three strategies on the 'meeting unit sales goals' and 'meeting revenue growth goals' indicators, nor on the market acceptance dimension of new product performance.

The financial criteria offered a different view on the performance implications of the three strategies: Two out of three financial performance criteria were statistically significant at $p < .05$: 'attaining margin goals' and 'break-even time.' Post-hoc Scheffé tests indicated that the first two strategies attained higher ratings than the third strategy on both indicators. Products launched with the first two strategies were on average more innovative than competing products whereas products launched with the third strategy were equally or less innovative. This relatively higher level of innovativeness may explain the higher margins achieved by products launched with the first two strategies. On the other hand, developing innovative new products requires larger investment than developing imitations (Kleinschmidt and Cooper, 1991; Mansfield, Schwarts and Wagner, 1981; Oppedijk van Veen and Hultink, 1996) which may explain why no significant differences were found in the IRR/ROI ratings among the three strategies. Overall, *High Price Innovations* and *Technology Pushers* performed better than the *Market Driven Penetrations* on the financial dimension of new product performance.

Several differences among the three consumer launch strategies were found on the product-level measures of new product performance. Both product-related criteria were statistically significant at $p < .05$. The *High Price Innovations* received highest ratings on both measures. Overall product-level performance was significantly higher for the *High Price Innovations* than for the Technology Pushers whose performance was higher than for the *Market Driven Penetrations*. Finally, the *High Price Innovations* received significantly higher ratings on the overall performance level and on most of the additional indicators than the *Market Driven Penetrations*.

To conclude, differences in the performance implications among the three strategies depended on the performance measure or dimension used. This finding agrees with Carter and Williams (1957), Cooper and Kleinschmidt (1995), Griffin and Page (1993, 1996), Hart (1993) and Hultink and Robben (1995a). The three strategies received similar ratings on the market acceptance dimension of new product performance. However, on the financial performance dimension strategy three received lowest ratings, and on the product-level dimension strategy one received highest ratings. Linking these performance differences to differences in the launch strategies presents some relevant implications for launching new consumer products.

Apparently, achieving high levels of market acceptance appears to be difficult for all types of products in all types of market situations. However, to achieve high levels of financial performance, firms should launch innovative products with a high-price strategy early in the product life cycle. In addition, to achieve high levels of product-level performance, new products should be based on both market needs and technological possibilities. Further, these products should be launched with high levels of distribution expenditures in noncompetitive markets. High levels of distribution expenditures may be necessary to distribute new products widely and swiftly to potential customers before competing products arrive on the market.

7.4.2   A typology of launch strategies for industrial products

A similar procedure as in section 7.4.1 derived launch strategies for industrial products. The data for the 576 industrial products were organized into a set of 21 strategic launch decisions, a set of 17 tactical launch decisions and a set of 15 indicators of new product performance. The results from the canonical correlation analysis are presented in section 7.4.2.1. Subsequently, the industrial launch strategies will be discussed in section 7.4.2.2. Finally, section 7.4.2.3 will deal with the performance implications of the industrial launch strategies.

7.4.2.1 Associations between the sets of strategic and tactical launch decisions

Canonical correlation analysis was used to ascertain associations across the sets of strategic and tactical launch decisions for the sample of industrial products. From a total of 576 industrial products, 30 products were removed since these introductions contained missing data values in both sets of variables. Therefore, the canonical correlation analysis was performed on the remaining 546 product introductions. A one-dimensional solution described the structure in the data best.[7] Table 7.8 summarizes the results for the one-dimensional solution.

The fit of this one-dimensional solution was 0.89 out of a maximum of 1. In addition, the eigenvalue of this dimension (0.89) and the canonical correlation coefficient (0.77) were high. Therefore, for the industrial product launches, one set of interrelated launch decisions can be distinguished.

This dimension suggest that strategic decisions managers make regarding the number of competitors, product innovativeness, driver of NPD, product newness, stage of the product life cycle and four objectives (expand the product range, produce existing products at lower costs, increase market penetration and capitalizing on an existing market) are associated with tactical

[7] In the two-dimensional solution, most variables that loaded higher than 0.30 on the second dimension also loaded high on the first dimension. The three-dimensional solution was difficult to interpret for similar reasons while in the four-dimensional solution, the convergence test value had still not been reached after 100 iterations.

Table 7.8: Canonical component loadings for industrial products

Variable	Dimension 1 Loading	Category
Strategic Launch Decisions		
- number of competitors	**.601**	**market**
- product innovativeness	**.577**	**product**
- driver of NPD	**-.437**	**firm**
- expand product range	**.425**	**firm**
- produce at lower costs	**.403**	**firm**
- product newness	**-.398**	**product**
- increase market penetration	**-.383**	**firm**
- capitalize on market	**.380**	**firm**
- stage of the PLC	**-.318**	**market**
- timing strategy	.269	
- utilize excess capacity	.199	
- NPD cycle time	.198	
- preempt emerging segment	-.185	
- market growth rate	.134	
- perception customers	.125	
- establish foothold	.109	
- increase company's image	-.105	
- offset seasonal cycle	.103	
- targeting strategy	-.091	
- put up barriers	-.078	
- capitalize on technology	-.067	
Tactical Launch Decisions		
- pricing strategy	**.462**	**price**
- branding strategy	**.430**	**product**
- trade promotion	**.415**	**promotion**
- price level	**.411**	**price**
- breadth of assortment	**.362**	**product**
- customer promotion	**.333**	**promotion**
- salesforce promotion	**.319**	**promotion**
- distribution channels	.292	
- distribution expenditures	.292	
- promotion expenditures	.272	
- personal selling	-.272	
- public relations	-.137	
- print-advertising	-.087	
- trade shows	.081	
- direct marketing	.080	
- radio-advertising	.069	
- tv-advertising	.013	
- eigenvalue	0.89	
- canonical correlation	0.77	

- Fit = 0.89 (out of 1)

Note: Component loadings > .30 are presented in bold

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launch decisions dictating the pricing strategy, branding strategy, price level, breadth of assortment, and the use of trade, customer and salesforce promotion. The most important strategic launch decisions in deriving the canonical variate refer to market competitiveness and relative product innovativeness while the most important tactical launch decisions involve pricing and product tactics (i.e., branding and assortment). Therefore, this dimension may be labeled 'price and product tactics depending on the number and innovativeness of competing products.'

Twelve strategic launch decisions, including seven objectives, were not sufficiently associated with the tactical launch decisions across the canonical dimension: timing strategy, NPD cycle time, market growth rate, customer perceptions, targeting strategy and the seven objectives: using excess capacity, preempting an emerging segment, establishing a foothold in a new market, increasing the company's image, offsetting a seasonal cycle, putting up barriers for the competition and capitalizing on a new technology. In addition, ten of the tactical launch decisions, including seven marketing communications instruments, were not associated with the strategies implemented earlier in the NPD process across the canonical dimension: the choice of distribution channels, distribution and promotion expenditures and the seven marketing communications instruments: personal selling, public relations, print, tv, and radio-advertising, trade shows and direct marketing.

To summarize, the canonical correlation analysis for the industrial products demonstrated that strategic and tactical launch decisions were related. Nine (out of 21) strategic launch decisions and seven (out of 17) tactical launch decisions were sufficiently related across the canonical dimension. This dimension featured all three strategic categories (i.e., product, market and firm strategy) and three (out of four) marketing mix elements (i.e., price, promotion and product tactics). In addition, both distribution decisions received dimension loadings close to 0.30. Although fewer decisions were interrelated for the industrial sample than for the consumer or the full sample, these analyses suggest that strategic and tactical launch decisions are not independent but may be made in sets when launching new industrial products.

7.4.2.2 Interpreting the industrial launch strategies

Since the structure among the strategic and tactical launch decisions for industrial products could be reduced to a single dimension, it was not possible nor necessary to rely on cluster analysis to derive clusters of products with similar launch strategies. For each new product, three options were possible: the product received a positive rating on the canonical variate, the product received a negative rating on the canonical variate, or the product received a very low score on the canonical variate (i.e., close to zero). After inspection of the canonical variate scores for each

product, which were in the range of -3.29 to 2.52, it was decided to form three clusters[8]: the bottom-third, the middle-third and the top-third.

The products in the bottom-third cluster (N=183) received a canonical variate score in the range of -3.29 to -0.52, in the middle-third cluster (N=181) in the range of -0.51 to 0.47 and in the top-third cluster (N=182) in the range of 0.48 to 2.52. For reasons of parsimony and to eliminate noise in the data, the bottom and top-third cluster will be contrasted below. This procedure derived one cluster of industrial products that received positive ratings on the canonical variate, and one cluster of industrial products that received negative canonical variate ratings. This procedure was chosen because it may be assumed that if the two groups will not differ in terms of interrelated strategic and tactical launch decisions and in terms of performance implications, other groups will probably also not differ.[9]

The average canonical variate scores were calculated for the two clusters of industrial new products (see Table 7.9). Not surprisingly, a t-test for investigating the equality of means indicated that the canonical variate scores differed significantly between both clusters ($t_{328.47} = 44.4$; $p < .0001$). Table 7.10 presents a crosstabulation of those launch decisions that loaded higher than .30 on the canonical dimension by cluster membership.

Table 7.9: Canonical variate scores for the industrial clusters

	Cluster Name	Average Canonical Variate Score*
Cluster 1 (N = 183)	Rapid Skimming Innovations	-1.28
Cluster 2 (N = 182)	Penetrating Additions	1.11

* t-test; $p < .0001$

Cluster 1 (N=183) received a negative rating on the canonical variate (-1.28), producing a set of completely new or improved introductions that are relatively more innovative, driven by technological capabilities as well as market needs, and launched in the introduction stage of the product life cycle in a market with no competitors present. Tactical launch decisions associated

[8] Although the groups of industrial products were not derived by cluster analysis, this chapter will use the term 'cluster' for groups of industrial products. This procedure was chosen to allow for maximum comparability in terminology between the findings for the consumer and the industrial samples.

[9] Although it was possible to split the original sample differently, the present split assured that the comparison groups differed in terms of the canonical variate scores while retaining adequate group size for further analyses.

with this set of strategic launch decisions are broad assortments, new brand names or the company name, and a high-price skimming strategy. This strategy for industrial new products will be referred to as the *Rapid Skimming Innovations* strategy.

Table 7.10: A typology of industrial launch strategies

Decision	Cluster 1 (N=183) *Rapid Skimming Innovations* level	Cluster 2 (N=182) *Penetrating Additions* level
Strategic Launch Decisions		
- Product innovativeness	more	equally/less
- Product newness	completely new/improvement	addition to line
- Stage of the PLC	introduction	maturity
- Number of competitors	none	more than 4
- Driver of NPD	mix/technology	market
- Objectives		expand product range
		increase penetration
		lower costs posible
		utilize existing market
Tactical Launch Decisions		
- Branding strategy	new brand/company name	brand extension
- Breadth of assortment	broader	equally broad
- Price level	higher	equal/lower
- Pricing strategy	skimming	penetration/other
- Communication channels		trade promotion
		customer promotion
		salesforce promotion

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after cross-tabulation

Cluster 2 (N=182) received a positive rating on the canonical variate (1.11). Therefore, this cluster of new products is characterized by equally or less innovative, market-driven additions to existing lines that are launched in the maturity stage of the product life cycle in a market with more than four competitors present to expand the product range, to increase market penetration, to produce existing products at lower costs or to use an existing market. Tactical launch decisions associated with this cluster are an equally broad assortment of penetration-priced brand extensions that more often use trade, customer and salesforce promotion to communicate the

existence of the new product to end users and distributors. This strategy for industrial new products is labeled the *Penetrating Additions* strategy.

The procedure discussed above derived two distinct industrial launch strategies. The performance implications of both strategies will be dealt with next.

7.4.2.3 Performance implications of the industrial launch strategies

Several analyses tested the performance implications of the two industrial launch strategies (see Table 7.11). The proportion of successful new products, the mean ratings for each of the 15 new product performance indicators, and overall performance for both strategies were calculated. The performance of both strategies was also compared on the three dimensions of new product performance derived in Chapter Six: market acceptance, financial performance and product-level performance.[10]

The *overall success ratio* (i.e., the percentage of successful new products launched with a certain strategy) differed significantly between both strategies (χ^2 (1) = 3.80; $p <$ .05). Of the 183 products launched with the *Rapid Skimming Innovations* strategy, 62.3% belonged to the successful performance category versus 52.2% for the *Penetrating Additions* strategy. In addition, the overall performance level and eight out of 15 performance indicators were significantly different at the $p <$ .05 level.

T-tests for testing the equality of means indicated that none of the market acceptance performance criteria was significantly different at $p <$ .05. Apparently, both strategies were equally effective in meeting market acceptance criteria since the average of the three market acceptance ratings did not differ significantly between both strategies. This finding suggests that it may be equally difficult to gain market acceptance for completely new, skimming-priced new products as for penetration-priced additions to existing lines. Although new products launched with the first strategy may have something new to offer, they may as well be more complex which induces potential buyers to postpone adoption until more information on the new product becomes available (Rogers, 1983).

The financial and product-level measures offer a different view on the performance implications of the two strategies. All three financial performance criteria and both product-level criteria were significantly different at the $p <$ .05 level. The *Rapid Skimming Innovations* strategy received higher ratings on all three financial criteria: 'attaining margin goals', 'break-even time'

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[10] A principal components analysis on the 15 performance measures for the industrial products resulted in a solution that was highly comparable to the solution for the total sample. The factor structure of the new product performance measures for the industrial products is presented in Appendix 7H.

and 'meeting IRR/ROI goals.' In addition, the ratings on the financial dimension of new product performance was significantly higher for the products launched with the first strategy. Therefore, it can be concluded that the *Rapid Skimming Innovations* strategy was better able in meeting financial performance goals, probably because products launched with this strategy were charged with relatively higher prices.

Table 7.11: Industrial launch strategies and performance implications

Performance Measure	Cluster 1 N = 183 *Rapid Skimming Innovations*	Cluster 2 N = 182 *Penetrating Additions*	*p*<.05
Overall Success Ratio (57.3%)	62.3%	52.2%	1>2
Overall Performance* (4.1)	4.4	3.9	1>2
Market Acceptance (3.8)	3.9	3.7	N.S.
- Revenue goals (3.8)	3.9	3.8	N.S.
- Revenue growth (3.7)	3.9	3.6	N.S.
- Unit sales goals (3.8)	3.9	3.7	N.S.
Financial Performance (3.8)	4.0	3.5	1>2
- Margin goals (4.0)	4.3	3.7	1>2
- Break-even time (3.7)	3.9	3.4	1>2
- IRR/ROI goals (3.6)	3.9	3.4	1>2
Product Performance (3.8)	4.3	3.4	1>2
- Launched on time (4.0)	4.5	3.5	1>2
- Speed to market (3.7)	4.1	3.3	1>2
Additional Indicators			
- Customer satisfaction (4.9)	5.0	4.9	N.S.
- Customer acceptance (4.6)	4.8	4.5	N.S.
- Market share goals (3.8)	4.1	3.5	1>2
- Profitability goals (3.8)	3.9	3.7	N.S.
- Product performance (5.3)	5.5	5.1	1>2
- Quality guidelines (5.1)	5.2	5.0	N.S.
- Development costs (4.0)	4.5	3.5	1>2

Note: Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true *N* per t-test varies because of missing values. The last column indicates whether the t-test was significant at *p* < .05. Entries within parentheses refer to the total sample.

*   Mean of the 15 performance criteria

Products launched with the first strategy also received higher ratings on the product-level measures of new product performance. Performance ratings were significantly higher for both product-level criteria: 'launched on time' and 'speed to market'. In addition, the rating on the product-level performance dimension of new product performance was significantly higher for the products launched with the first strategy. Finally, *Rapid Skimming Innovations* received higher ratings on the overall performance measure and on three (out of six) additional performance indicators (i.e., 'market share goals', 'product performance level' and 'development costs').

To summarize, differences in the performance implications of the industrial launch strategies depended on the performance measure or dimension used. The findings for the industrial products were similar to the findings for the consumer products. First, the smallest performance differences among the strategies were found on the market acceptance dimension and the largest differences on the financial and product-level dimensions of new product performance. In addition, more innovative products received significantly higher ratings on the product-level and financial performance criteria than less innovative products but not on the market acceptance criteria of new product performance. Therefore, a general pattern emerges from the consumer as well as for the industrial launch strategies: innovative skimming-priced new products that were launched in an early stage of the product life cycle were better able in meeting product and financial goals than their less innovative penetration-priced counterparts that are launched in later stages of the product life cycle. To test Hypothesis 3_C, the next section will compare the canonical structures derived for the consumer and industrial samples.

7.4.3   Comparing the results for the consumer and industrial products

Several strategic and tactical launch decisions were interrelated in both samples. Two sets of interrelated launch decisions were derived for the consumer sample and one set for the industrial sample. In general, more launch decisions were interrelated for the consumer sample than for the industrial sample. Thirteen (out of 21) strategic launch decisions and ten (out of 17) tactical launch decisions received dimension loadings higher than 0.30 on the first or second canonical dimension for the consumer sample, whereas nine (out of 21) strategic and seven (out of 17) tactical launch decisions were associated for the industrial sample. These findings suggest that it may be more difficult to develop a consistent and sound launch strategy for new consumer products than for new industrial products because more interrelated launch decisions need to be considered.

A comparison of Table 7.4 and 7.8 shows that several strategic and tactical launch decisions were interrelated for the consumer *and* for the industrial sample. Table 7.12 presents the results from this comparison.

Table 7.12: Comparison of canonical structures for consumer and industrial products

Variable	Consumer products Dimension 1	Dimension 2	Industrial products Dimension 1
Strategic launch decisions			
- stage of the PLC	.530		.318
- driver of NPD	.483		.437
- produce at lower costs	.442		.403
- capitalize on market	.400		.380
- product innovativeness	.374		.577
- expand product range	.301		.425
- number of competitors	.318	.553	.601
- increase market penetration			.383
- product newness			.398
- increase company's image	.349		
- preempt segment		.309	
- put up barriers		.498	.309
- timing strategy			.379
- NPD cycle time			.378
- targeting strategy			.369
Tactical launch decisions			
- salesforce promotion	.559		.319
- customer promotion	.531		.333
- price level	.468		.411
- public relations	.432	.311	
- pricing strategy	.400	.354	.462
- trade promotion		.452	.415
- breadth of assortment		.372	.362
- branding strategy		.348	.430
- distribution expenditures		.306	
- promotion expenditures		.373	

Note: Only component loadings > .30 are depicted

Comparing the first dimension for the consumer sample with the only dimension for the industrial sample suggests that several strategic and tactical launch decisions are generally interrelated. These associations suggest that the way in which managers make launch decisions for consumer and industrial products regarding the stage of the product life cycle, the driver of NPD, product innovativeness, market competitiveness and three objectives (i.e., producing existing products at lower costs, capitalizing on an existing market and expanding the product range) are associated with tactical launch decisions regarding price level, pricing strategy and the use of customer and salesforce promotion.

Because the strategic aspects in this dimension refer to market development characteristics, these results suggest that pricing and promotion tactics are particularly associated to the development stage of a market. In early stages of the product life cycle, few competitors are around and products tend to be technology-driven and innovative. In these circumstances, prices should be relatively high. In contrast, in later stages of the product life cycle many competitors are present, and products are market-driven and not so innovative anymore. Then, prices should be lower and salesforce and customer promotions are required to generate awareness and interest in the new product.

Three strategic launch objectives (i.e., increasing the company's image, preempting an emerging segment and putting up competitive barriers) and one tactical launch decision (i.e., public relations) were added to this general canonical dimension for the consumer sample. For the industrial sample, two strategic launch decisions (i.e., increasing market penetration and product newness) and three tactical launch decisions (i.e., trade promotion, breadth of assortment and branding strategy) were added. All three tactical launch decisions appeared in the second canonical dimension for the consumer products, however. Therefore, these findings suggest that there is a clear correspondence among the strategic aspects of the canonical dimension for the industrial sample and the first dimension for the consumer sample. The tactical aspects of the industrial dimension are a combination of the tactical elements of both consumer dimensions except for public relations and marketing expenditures (i.e., promotion and distribution). Strategic launch decisions regarding launch timing and target market selection guided these three launch tactics for the consumer sample while this strategic posture was independent of the tactical aspects of the launch for the industrial sample.

In addition, there was some correspondence between both samples with respect to the strategic and tactical launch decisions that were not interrelated across the canonical dimensions. Six strategic launch decisions were not sufficiently associated with the tactical launch decisions for both samples across the dimensions derived: customer perceptions, market growth rate and four objectives: using excess capacity, capitalizing on a new technology, establishing a foothold in a new market and offsetting a seasonal cycle. Similarly, seven tactical launch decisions remained relatively independent of the strategic aspects of the launch: the choice of distribution channels and six marketing communications instruments: direct marketing, tv, radio, and print-advertising, personal selling and trade shows.

These results suggest that the choice of marketing communications instruments is rather independent of other new product launch decisions. This finding is especially surprising for the consumer products in the sample which usually rely heavily on marketing communications efforts to attain launch success. A possible explanation for this finding may be that the choice of

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marketing communications instruments is made by advertising agencies whereas the other launch decisions are made within the firm.

To summarize, comparing the canonical structures derived for both samples showed that several launch decisions were interrelated for the consumer and for the industrial sample. Several differences were found in the canonical structures for both samples. These differences occurred among the tactical elements. The tactical launch decisions that were interrelated with the strategic launch decisions for the industrial sample were represented by two groups of inter-related tactical launch decisions in the consumer sample. There was correspondence between the consumer and industrial samples in the tactical launch decisions that were interrelated with strategic launch decisions. This correspondence pertained to the first dimension of the canonical structure. A difference between both samples occurred in that the tactical launch decisions that were related to strategic launch decisions in the second canonical dimension for the consumer sample had no counterpart in the industrial sample. Therefore, Hypothesis 3_C was rejected.

7.5 Conclusions and implications

The present chapter set out to investigate whether consumer and industrial new products are launched in different ways. The analysis of 442 consumer products and 576 industrial products suggests that this is the case. The results of the separate analyses of strategic and tactical launch decisions in section 7.3 showed that launch decisions for consumer and industrial products differed significantly. Fourteen (out of 21) strategic and thirteen (out of 17) tactical launch decisions differed significantly between the consumer and industrial sample. In addition, the analyses in section 7.4 showed several differences between both product types in the inter-relationships between the sets of strategic and tactical launch decisions.

The analyses in section 7.3 showed that, with regard to the strategic launch decisions, consumer products were more often market-driven incremental improvements targeted at mass-markets by fast imitators for positional reasons. In contrast, industrial products were more often innovative performance improvements targeted at niche markets by technological innovators to gain a foothold in a new market or to capitalize on a new technology. When the tactical launch decisions were considered, consumer products were more often an equally broad assortment of brand extensions distributed through current channels with similar distribution and promotion expenditures as competitors while using trade promotion, customer promotion, print advertising and the broadcasting media. In contrast, industrial products were more often a broad assortment of skimming-priced new products that are branded with the company name and distributed

through new channels with lower distribution expenditures while using personal selling, direct marketing and public relations.

These results suggest that industrial new products aim at improving the performance of current products on the market whereas the newness of new consumer products is more often incremental. This finding is consistent with the objectives, the pricing strategies, and the marketing communications instruments for both product types. Apparently, firms launch incremental improvements to defend current territories and performance improvements to search for new territories. In addition, firms employ skimming pricing strategies for performance improvements and no specific pricing strategy for incremental improvements. This finding suggests that customers are willing to pay a higher price for performance improvements but not for incremental improvements. Finally, firms use trade promotion, customer promotion, and several broadcasting media to communicate the existence of incremental improvements to customers and distributors whereas they rely more often on public relations, direct marketing and personal selling to communicate the existence of performance improvements. Apparently, performance improvements require personal selling to explain the advantages of the improvements to customers. Traditional broadcasting media may be sufficient to create awareness and interest for incremental improvements.

Canonical correlation analyses investigated the interrelationships between the sets of strategic and tactical launch decisions. The analyses showed that the associations between the strategic and tactical launch decisions for both samples were similar in some respects and dissimilar in others. For both samples, strategic launch decisions referring to market development characteristics were associated with pricing and promotion tactics. This dimension suggested that pricing and promotion decisions may be dictated by characteristics of the market.

An additional dimension was only derived for the consumer products indicating that strategic launch decisions referring to launch timing and target market selection were associated with trade promotion, marketing expenditures (i.e., promotion and distribution expenditures) and product tactics (branding and product assortment). A possible explanation for this difference may be that many industrial products are uniquely developed for a single customer. Target market selection is not an issue in this scenario while launch timing may only refer to the delivery date requested by the customer. Then, there are no reasons why these conditions should be associated with branding decisions and marketing expenditures. Consumer products, however, are usually developed for a rather anonymus crowd. Then, decisions regarding the breadth of market entry and the timing of the new product's launch should be related to marketing expenditures and product tactics. For example, it seems reasonable to expect that marketing expenditures should be higher and product assortment broader when the scale of market entry is broad.

There was also some correspondence between both samples with respect to the strategic and tactical launch decisions that were not interrelated across the canonical dimensions. In addition, cluster analyses of the sets of interrelated launch decisions showed that two of the three consumer launch strategies were comparable to the two industrial strategies: The first consumer strategy resembled the first industrial strategy, and the third consumer launch strategy was comparable to the second industrial launch strategy. One additional strategy was uniquely derived for the consumer products: the *Technology Pushers*.

Differences in the performance implications among the launch strategies for the consumer and industrial sample depended on the performance measure or dimension used. Smallest differences among the strategies were found on the market acceptance indicators of new product performance and largest differences on the financial and product-level indicators of new product performance. The high-priced innovative new products that are based on technological possibilities as well as market needs (i.e., the *High Price Innovations* and *Market Driven Penetrations*) received highest ratings on all 15 performance criteria, and significantly so in a majority of the cases. These products were especially proficient in meeting financial and product-level goals. The less innovative penetration-priced new products (i.e., the *Market Driven Penetrations* and *Penetrating Additions*) received lowest ratings on each indicator. Apparently, developing me-too products is a recipe for failure for consumer and industrial products alike. The performance implications of the *Technology Pushers* were intermediate. The ratings on the financial indicators were relatively high, probably because of the high-price skimming strategy. However, product-level and market acceptance goals were relatively less well met. Since the new products in this cluster were mainly technology driven, this strategy may be comparable to the 'better mousetrap that nobody wanted' scenario proposed by Calantone and Cooper (1975). The new products in this sample were technologically advanced but probably did not offer sufficient advantages for end-users.

To conclude, the differences between the consumer and industrial launch decisions and canonical structures were larger than the similarities. First, launch decisions for consumer products differed from launch decisions for industrial products with regard to the launch decision levels. For example, industrial products are usually more innovative and offer performance improvements whereas consumer products offer incremental improvements and usually are equally innovative as competing products. In addition, several differences were found in the interrelationships between the sets of the strategic and tactical launch decisions. The largest similarities between both samples were found in the performance implications of the launch strategies. The smallest performance differences among those strategies were found on the market acceptance dimension and the largest differences on the financial and product-level dimensions of new product performance.

8. LAUNCHING NEW PRODUCTS IN THE NETHERLANDS, THE U.K. AND THE U.S.A.

8.1 Introduction

The sample of new products that was used for the analyses in Chapter Six consisted of products that were introduced in The Netherlands, the U.K. and the U.S.A.. Crosstabulating the three generic launch strategies derived across the full sample in Chapter Six with country of introduction revealed a statistically significant relationship. These results suggest that launch strategies may be country-specific. Therefore, the present chapter will investigate within-country launch strategies.

Section 8.2 discusses the sample of products and respondents. Section 8.3 presents several differences in strategic and tactical launch decisions among the three countries of introduction. Given these differences, the analyses from Chapter Six were repeated for the Dutch, U.K. and U.S. samples. The purpose of this exercise was to derive country-specific launch strategies. Section 8.4 presents and compares the findings for the three country samples while section 8.5 draws conclusions and discusses implications.

8.2 Method

The analyses in the present chapter encompass the three country samples. Table 8.1 presents the three sample compositions and summary statistics. The 622 Dutch, U.K. and U.S. firms or business units provided data on 1,022 new product introductions of which 598 (59%) were designated by the respondent as successful and 424 (41%) as unsuccessful. This proportion of success and the percentage of profits generated by new products introduced in the last five years did not differ significantly among the three country samples. However, overall performance was significantly higher for the products introduced in The Netherlands than for the new products introduced in the U.K.. In addition, the percentage of sales generated by new products introduced in the last five years was significantly higher for the U.K. firms than for the Dutch and U.S. firms (51% versus 43%). Finally, the percentage of consumer products was significantly higher in the U.K. sample than in the Dutch and U.S. samples.

Table 8.1: Sample composition and summary statistics

	The Nether-lands	U.S.A.	U.K.	Total sample
number of firms	155	175	292	622
number of products	243	288	491	1022
number of consumer products	91	91	260	442
number of industrial products	148	197	231	576
% consumer products*	38%	32%	53%	43%
number of successes	146	160	292	598
number of failures	97	128	199	424
success rate (% success)	60%	56%	60%	59%
overall performance**	4.6	4.2	4.1	4.3
% of sales by new products***	43%	43%	51%	47%
% of profits by new products	41%	42%	44%	43%

Note: Performance criteria were measured on a 7-point Likert-scale with '1' = 'did not meet criteria at all' and '7' = 'met criteria completely'

* *Percentage consumer products* was significantly higher for the U.K. sample than for the Dutch and U.S. samples at $p < .0001$.

** *Overall performance* (i.e., mean of the 15 performance criteria) was significantly higher for the products in the Dutch sample than for the products in the U.K. sample at $p < .05$.

*** *Percentage of sales by new products* (introduced in the last five years) was significantly higher for the U.K. firms than for the Dutch and U.S. firms at $p < .05$.

8.3 Differences in strategic and tactical launch decisions among the three countries

This section consists of two parts. The first part investigates differences in *strategic* launch decisions among the three countries of introduction (testing Hypothesis 4_A). Then, differences in *tactical* launch decisions among the three countries are discussed (testing Hypothesis 4_B).

Strategic Launch Decisions

To test Hypothesis 4_A which stated that *strategic* launch decisions differ among the three countries, all 21 strategic launch decisions were crosstabulated with country of introduction. Table 8.2 contains the results of these crosstabulations. Nineteen out of the 21 tests showed a statistically significant relationship between country and strategic launch decisions at $p < .05$ or better. These results strongly suggest that strategic launch decisions differ among countries. Therefore, the data supported Hypothesis 4_A.

Table 8.2: Strategic launch decisions and country of introduction

	The Nether-lands N=243	U.S.A. N=288	U.K. N=491	Total N=1022	Test-statistic
Product innovativeness					
- more innovative	**56%**	**63%**	29%	45%	$\chi^2(4)=102.2$;
- equally innovative	39%	31%	**62%**	48%	$p<.0001$
- less innovative	5%	6%	**10%**	8%	
NPD cycle time					
- less than 6 months	**17%**	6%	2%	7%	$\chi^2(6)=104.5$;
- 6 months - 1 year	**38%**	26%	20%	26%	$p<.0001$
- 1 - 3 years	37%	44%	**55%**	48%	
- more than 3 years	8%	23%	**23%**	19%	
Product newness					
- completely new	**18%**	**25%**	5%	14%	$\chi^2(10)=87.9$;
- new product line	32%	20%	**35%**	30%	$p<.0001$
- addition to line	28%	29%	**40%**	34%	
- improvement	16%	19%	16%	17%	
- repositioning	4%	**5%**	1%	3%	
- lower cost	2%	2%	2%	2%	
Perception customers					
- incremental improvement	30%	**40%**	33%	34%	$\chi^2(4)=9.8$;
- performance improvement	60%	48%	57%	55%	$p<.05$
- never seen before	10%	12%	10%	11%	
Targeting strategy					
- niche	18%	**36%**	23%	25%	$\chi^2(4)=32.7$;
- selective	48%	35%	**51%**	46%	$p<.0001$
- mass-market	**34%**	29%	26%	29%	
Market growth rate					
- less than 0%	**16%**	4%	3%	6%	$\chi^2(6)=117.1$;
- 0% - 5%	45%	44%	42%	43%	$p<.0001$
- 5% - 10%	18%	23%	**43%**	32%	
- more than 10%	20%	**29%**	12%	19%	
Stage of the PLC					
- introduction	**23%**	**30%**	3%	15%	$\chi^2(6)=127.0$;
- growth	41%	31%	39%	37%	$p<.0001$
- maturity	32%	37%	**55%**	45%	
- decline	5%	3%	2%	3%	
Market competitiveness					
- not one competitor	17%	**33%**	4%	15%	$\chi^2(4)=129.3$;
- 1 to 3 competitors	37%	39%	**48%**	43%	$p<.0001$
- ≥ 4 competitors	47%	27%	**48%**	42%	
Timing strategy					
- technological innovator	43%	**59%**	37%	45%	$\chi^2(4)=61.5$;
- fast imitator	48%	32%	**60%**	49%	$p<.0001$
- cost reducer	**10%**	9%	4%	6%	
Driver of NPD					
- completely market	5%	3%	6%	5%	$\chi^2(6)=162.7$;
- mainly market	41%	29%	**67%**	50%	$p<.0001$
- mix market/technology	**41%**	**39%**	21%	31%	
- mainly technology	13%	**29%**	6%	14%	

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Table 8.2: Strategic launch decisions and country of introduction (continued)

	The Nether-lands N=243	U.S.A. N=288	U.K. N=491	Total N=1022	Test-statistic
Objectives					
- **expand product range**	67%	57%	**89%**	75%	$\chi^2(2)=108.0; p<.0001$
- **increase penetration**	54%	46%	**82%**	65%	$\chi^2(2)=122.5; p<.0001$
- **utilize existing market**	41%	32%	**74%**	54%	$\chi^2(2)=148.2; p<.0001$
- **barriers for competition**	25%	28%	**59%**	42%	$\chi^2(2)=111.8; p<.0001$
- **utilize new technology**	28%	**43%**	29%	32%	$\chi^2(2)=19.5; p<.0001$
- **lower costs possible**	12%	14%	**43%**	28%	$\chi^2(2)=114.9; p<.0001$
- increase company's image	28%	25%	28%	27%	$\chi^2(2)=1.2; p=.56$
- **foothold in new market**	27%	**32%**	16%	23%	$\chi^2(2)=26.6; p<.0001$
- **emerging market segment**	**36%**	16%	10%	18%	$\chi^2(2)=76.9; p<.0001$
- **utilize excess capacity**	8%	10%	**21%**	15%	$\chi^2(2)=30.2; p<.0001$
- extend seasonal cycle	5%	4%	7%	6%	$\chi^2(2)=4.8; p=.09$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Products introduced in The Netherlands were more often (in comparison with the U.K. and U.S. introductions):

- more innovative than competitors' efforts;
- swiftly developed;
- completely new;
- targeted at a mass-market;
- introduced in declining markets (i.e., with negative growth rates);
- introduced in the introduction stage of the product life cycle;
- launched by cost reducers;
- driven by a market/technology mix; and
- launched with the objective of preempting an emerging market segment

Products introduced in the U.S.A. were more often:

- more innovative than competitors' efforts;
- completely new or a repositioning;
- incremental improvements;
- targeted at a niche;
- introduced in high-growth markets;
- introduced in the introduction stage of the product life cycle;

- first to market (i.e., launched in a market with no competitors present);
- launched by technological innovators;
- driven by a market-technology mix or by technological possibilities;
- launched with the objectives of
  - using a new technology, and
  - establishing a foothold in a new market.

Finally, products introduced in the U.K. were more often:

- equally or less innovative than competitors' efforts;
- slowly developed;
- new product lines or additions to existing lines;
- targeted at selective markets;
- introduced in moderate-growth markets;
- introduced in the maturity stage of the product life cycle;
- targeted at competitive markets (i.e., several competitors present);
- launched by fast imitators;
- mainly market-driven;
- launched with the objectives of
  - expanding the product range,
  - increasing market penetration,
  - using an existing market,
  - putting up barriers for the competition,
  - producing existing products at lower costs, and
  - using excess capacity.

Two strategic launch objectives remained independent of the country where the new product was introduced, namely increasing the company's image and extending a seasonal cycle. Apparently, about 27% of all new products launched in the three countries were introduced to increase the company's image. In addition, about 6% of the new products introduced in the three countries were launched to extend a seasonal cycle. However, this finding may be less relevant because new products were infrequently launched with this objective (in four to seven percent of the cases). Apart from these two variables, there are marked differences among the three countries when strategic launch decisions are considered.

To conclude, all but two of the 21 strategic launch decisions differed with regard to the country where the new product was introduced at $p < .05$. These findings strongly suggest that

strategic launch decisions differ among countries. Since it has previously been shown that strategic and tactical launch decisions are related (see Chapter Six and Seven), it may be expected that several tactical launch decisions will also differ among the three countries.

Tactical Launch Decisions
Similar analyses investigated whether differences in tactical launch decisions exist among the three countries of introduction (testing Hypothesis 4_B). The seven tactical launch decisions and the reported use of ten marketing communications instruments were crosstabulated with country of introduction. Table 8.3 contains the results of these crosstabulations.

As predicted, most tactical launch decisions differed among countries: All seven tactical launch decisions and seven out of ten marketing communications instruments. These 14 significant differences out of 17 tests strongly suggest that product launches in the three countries differ with regard to the tactical launch decisions made. Therefore, the data supported Hypothesis 4_B. The results showed that products introduced in The Netherlands were more often (in comparison with the U.K. and U.S. introductions):

- launched in a broader assortment than competitive products;
- branded with the company name;
- distributed through new distribution channels;
- launched with lower distribution expenditures than competitive products;
- higher priced than competitive products;
- launched with higher promotion expenditures than competitive products;
- launched while using more of the following marketing communications instruments:
  - personal selling, and
  - public relations.

Products introduced in the U.S.A. were more often:

- launched in a broader assortment than competitive products;
- branded with a new brand name or with the company name;
- distributed through new distribution channels;
- launched with higher distribution expenditures than competitive products;
- skimming high-priced;
- launched with lower promotion expenditures than competitive products;
- launched while using more of the following marketing communications instruments:
  - print advertising, and
  - public relations.

Table 8.3: Tactical launch decisions and country of introduction

	The Nether-lands	U.S.A.	U.K.	Total	Test-statistic
	N=243	N=288	N=491	N=1022	
Breadth of assortment					
- broader	**47%**	**44%**	13%	30%	$\chi^2(4)=141.7$;
- equally broad	32%	31%	**63%**	47%	$p<.0001$
- smaller	21%	25%	23%	23%	
Branding strategy					
- new brand name	30%	**38%**	27%	31%	$\chi^2(6)=127.7$;
- brand extension	21%	20%	**52%**	36%	$p<.0001$
- company name	**42%**	**37%**	18%	29%	
- generic / no brand	**7%**	5%	2%	4%	
Distribution channels					
- current channels	80%	81%	73%	77%	$\chi^2(4)=55.7$;
- new channels	**8%**	**8%**	1%	5%	$p<.0001$
- both current / new	12%	11%	**26%**	18%	
Distribution expenditures					
- higher	17%	**24%**	12%	17%	$\chi^2(4)=57.6$;
- about the same	58%	55%	**78%**	67%	$p<.0001$
- lower	**25%**	21%	10%	16%	
Price level					
- higher	**41%**	**52%**	14%	30%	$\chi^2(4)=124.0$;
- about the same	36%	34%	**48%**	42%	$p<.0001$
- lower	24%	15%	**37%**	29%	
Pricing strategy					
- skimming	34%	**51%**	17%	31%	$\chi^2(4)=104.6$;
- penetration	39%	31%	**51%**	43%	$p<.0001$
- other	27%	18%	**32%**	27%	
Promotion expenditures					
- higher	**35%**	26%	18%	24%	$\chi^2(4)=50.2$;
- about the same	33%	39%	**57%**	47%	$p<.0001$
- lower	32%	**35%**	26%	30%	
Communication channels					
- **salesforce promotion**	49%	79%	**90%**	77%	$\chi^2(2)=150.6$; $p<.0001$
- **trade promotion**	47%	66%	**83%**	70%	$\chi^2(2)=108.0$; $p<.0001$
- **customer promotion**	21%	43%	**74%**	53%	$\chi^2(2)=199.5$; $p<.0001$
- **personal selling**	**62%**	56%	41%	50%	$\chi^2(2)=32.1$; $p<.0001$
- direct marketing	32%	36%	39%	36%	$\chi^2(2)=3.5$; $p=.18$
- **print-advertising**	31%	**45%**	29%	34%	$\chi^2(2)=21.9$; $p<.0001$
- **public relations**	**42%**	**39%**	24%	33%	$\chi^2(2)=29.6$; $p<.0001$
- **trade shows**	10%	10%	**15%**	13%	$\chi^2(2)=6.3$; $p<.05$
- tv-advertising	10%	11%	8%	9%	$\chi^2(2)=1.1$; $p=.57$
- radio-advertising	5%	5%	6%	5%	$\chi^2(2)=0.6$; $p=.74$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Finally, products introduced in the U.K. were more often:

- launched in an equally broad assortment as competitive products;
- brand extensions;
- distributed through both current and new distribution channels;
- launched with similar distribution expenditures as competitive products;
- about the same or lower-priced than competitive products;
- priced with a penetration or other pricing strategy;
- launched with similar promotion expenditures as competitive products;
- launched while using more of the following marketing communications instruments:
  - salesforce promotion,
  - trade promotion,
  - customer promotion, and
  - trade shows.

The use of direct marketing, tv-advertising and radio-advertising did not significantly differ among countries. Since tv and radio-advertising were only used in about 9% and 5% of the cases respectively, it may be less relevant that no significant differences were found with respect to these two tactical launch decisions. However, overall companies used direct marketing to communicate the existence of the new product in about 36% of the cases.

The analyses reported above show that, apart from three marketing communications instruments, there are marked differences across all four marketing tactics (product, distribution, price and promotion) among the countries where tactical launch decisions are considered. Taken together, the results of the separate analyses of strategic and tactical launch decisions showed that launch decisions for new products differ in statistically significant ways among the three countries. Comparing the results reported in this section with the results in the previous chapter (see Tables 7.2 and 7.3) suggests that differences in launch decisions are larger among countries than for type of market served. Although a similar number of tactical launch decisions were significantly different (14 country differences versus 13 product differences), the number of strategic launch differences was higher among countries than between product types (19 country differences versus 14 product differences).[1]

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[1] To increase the generalizability of the reported results, it was also checked whether the consumer and industrial samples displayed the same patterns of results as presented in Tables 8.2 and 8.3. The results showed that both samples replicated most relationships between country of introduction and strategic and tactical launch decisions that were revealed by the total analysis. Appendices 8A to 8D contain the results of these analyses for the consumer and industrial samples.

8.4 Towards a typology of country-specific launch strategies

The findings reported in section 8.3 showed that there are several differences in strategic and tactical launch decisions among the countries of introduction. Nineteen (out of 21) strategic and fourteen (out of 17) tactical launch decisions differed significantly among the countries at $p < .05$. To investigate whether launch strategies also differ among countries, the analyses from Chapter Six (i.e., canonical correlation and cluster analysis) were repeated for the three country samples separately. Section 8.4.1 deals with the results from the canonical correlation analyses, section 8.4.2 presents the findings from the cluster analyses and section 8.4.3 discusses the performance implications of the derived launch strategies. Finally, section 8.5 draws conclusions and discusses implications.

8.4.1 Associations between the sets of strategic and tactical launch decisions

The data for the product introductions were organized into a set of 21 strategic launch decisions, a set of 17 tactical launch decisions and a set of 15 indicators of new product performance. Canonical correlation analysis investigated the interrelationships between the sets of strategic and tactical launch decisions for each of the three country samples.

The Netherlands. From a total of 243 introductions, 20 products were removed due to missing data. A two-dimensional solution described the structure in the data best, with a solution fit of 1.79, where a maximum fit of two would indicate a perfect relationship. In addition, the eigenvalues of both canonical dimensions (.91 and .88) and the canonical correlation coefficients (.83 and .76) were high. About 40% of the launch decisions were related across the two canonical dimensions. Table 8.4 summarizes the results for the two-dimensional solution and shows which strategic and tactical launch decisions were related as sets.

Dimension one. The first dimension suggests that the way in which managers make strategic launch decisions regarding the market growth rate, number of competitors, customer perceptions and with regard to one objective (establishing a foothold in a new market) are associated with tactical launch decisions dictating the relative price level and the use of tv-advertising, customer promotion and personal selling. From the signs of the loadings, firms launch incremental high-priced improvements in slow growing markets where few competitors are present with customer promotion and tv-advertising. Conversely, when major improvements are launched to establish a foothold in competitive high-growth markets, personal selling is used and prices tend to be lower than for competitive products. The most important strategic launch decisions in deriving this canonical dimension refer to market growth and competitiveness

Table 8.4: Canonical component loadings for the Dutch introductions

Variable	Dimension 1		Dimension 2	
	Loading	Category	Loading	Category
Strategic launch decisions				
- market growth rate	**-.463**	**market**	.035	
- driver of NPD	.040		**-.426**	**firm**
- number of competitors	**-.423**	**market**	.020	
- perception customers	**-.422**	**product**	-.112	
- capitalize on technology	-.190		**.369**	**firm**
- capitalize on market	.158		**.333**	**firm**
- establish foothold	**-.305**	**firm**	-.009	
- increase company's image	.130		.294	
- stage of the PLC	.278		-.280	
- timing strategy	-.276		-.229	
- product newness	.069		-.271	
- produce at lower costs	-.247		-.071	
- use excess capacity	-.062		-.244	
- targeting strategy	-.131		.205	
- preempt segment	.054		.189	
- product innovativeness	-.171		-.117	
- put up barriers	.111		.161	
- offset seasonal cycle	-.157		.081	
- expand product range	-.138		.101	
- NPD cycle time	.119		-.081	
- increase penetration	-.055		.016	
Tactical launch decisions				
- pricing strategy	.070		**.513**	**price**
- tv-advertising	**.443**	**promotion**	.108	
- print-advertising	.128		**.407**	**promotion**
- trade shows	-.057		**.373**	**promotion**
- customer promotion	**.353**	**promotion**	.229	
trade promotion	.076		**.346**	**promotion**
- personal selling	**-.333**	**promotion**	.169	
- price level	**-.306**	**price**	-.246	
- public relations	-.279		.128	
- radio-advertising	.279		.110	
- promotion expenditures	-.250		-.102	
- distribution expenditures	.055		-.219	
distribution channels	.200		.108	
- breadth of assortment	-.188		.026	
- direct marketing	-.159		.047	
- branding strategy	.119		-.093	
- salesforce promotion	.012		.088	
- eigenvalue	0.91		0.88	
- canonical correlation	0.83		0.76	

- Fit = 1.79 (out of 2)

Note: Component loadings > .30 are presented in bold

whereas the most important tactical launch decisions involve promotion and pricing tactics. Therefore, dimension one is labeled 'value propositions depending on market potential.'

Dimension two. The second dimension of interrelated launch decisions suggests that strategic decisions managers make regarding the driver of NPD and two objectives (capitalizing on a new technology and capitalizing on an existing market) are associated with tactical launch decisions regarding the pricing strategy and the use of print-advertising, trade shows and trade promotion. The signs of the loadings suggest that firms launch market-driven new products with a penetration pricing strategy and the use of trade promotion, print-advertising and trade shows to capitalize on a new technology and on an existing market. Conversely, firms launch technology-driven new products with a skimming pricing strategy. The most important strategic launch decisions in deriving the second canonical dimension are the driver of NPD and two objectives whereas the most important tactical launch decisions involve pricing and promotion tactics. Therefore, dimension two is labeled 'value propositions depending on the driver and objectives of NPD.'

Fourteen strategic launch decisions, including eight commercialization objectives, were not systematically associated with any of the tactical variables across the two canonical dimensions. In addition, nine tactical launch decisions were independent of the strategies implemented earlier in the NPD process across the two dimensions. In contrast to the canonical structure for the overall sample (see Table 6.1), none of the product or distribution tactics were related to the strategic launch decisions. Further, it is intriguing that both pricing decisions were related to the strategic decisions that a firm makes while both decisions involving costs (i.e., distribution and promotion expenditures) were independent of the strategic nature of the launch. An explanation for this finding may be that marketing investments for new products in The Netherlands were driven primarily by available budgets rather than by the strategic posture of the new product's launch.

United Kingdom. From a total of 491 introductions, one product was removed due to missing data. A four-dimensional solution described the structure in the data best. The fit of this four-dimensional solution was 3.27, where a maximum fit of four would indicate a perfect relationship. In addition, the eigenvalues of the four dimensions (0.84, 0.83, 0.81 and 0.79) and the canonical correlation coefficients (0.68, 0.66, 0.62 and 0.58) were high. A four-dimensional solution implies that the original 38 variables divide into four related groups of decisions, of which 24 load sufficiently to be considered related across the dimensions. Table 8.5 summarizes the four-dimensional solution.

Dimension one. The first dimension of interrelated strategic and tactical launch decisions suggests that strategic launch decisions managers make regarding the number of competitors, targeting strategy, product innovativeness, timing strategy and two objectives (increasing

Table 8.5: Canonical component loadings for the U.K. introductions

Variable	Dimension 1 Loading	Dimension 2 Loading	Dimension 3 Loading	Dimension 4 Loading
Strategic launch decisions				
- **number of competitors**	**.706 (M)**	.139	.251	-.173
- **driver of NPD**	-.117	.039	-.068	**.599 (F)**
- **targeting strategy**	**.598 (M)**	.180	-.072	.040
- **perception customers**	-.080	-.048	**.566 (P)**	.038
- **increase penetration**	.005	.125	**.530 (F)**	.163
- **product innovativeness**	**.523 (P)**	-.014	-.101	**.351 (P)**
- **market growth rate**	-.224	**.458 (M)**	.072	-.061
- **increase company's image**	**-.448 (F)**	**.340 (F)**	-.058	-.007
- **produce at lower costs**	**.418 (F)**	.082	.188	.051
- **product newness**	.034	**.404 (P)**	-.026	-.155
- **establish foothold**	-.239	**.386 (F)**	.197	-.098
- **timing strategy**	**.383 (F)**	-.043	.007	-.129
- **stage of the PLC**	-.088	-.083	**.324 (M)**	-.218
- **NPD cycle time**	.156	.242	**-.321 (P)**	.203
- offset seasonal cycle	-.244	.122	.167	.252
- capitalize on technology	-.051	.044	-.053	-.221
- capitalize on market	.118	-.103	-.163	.209
- use excess capacity	.208	.044	-.160	.063
- preempt segment	-.191	-.186	.125	-.131
- expand product range	-.004	-.104	.109	.171
- put up barriers	-.064	-.137	.119	.033
Tactical launch decisions				
- **pricing strategy**	**.725 (PR)**	.209	-.083	-.031
- **customer promotion**	.149	-.075	**-.520 (PM)**	**.453 (PM)**
- **distribution expenditures**	**.461 (D)**	-.168	.014	-.024
- **tv-advertising**	-.196	-.022	**-.416 (PM)**	.037
- **branding strategy**	-.208	**.414 (PD)**	.129	**.332 (PD)**
- **trade promotion**	-.018	.040	**.400 (PM)**	.297
- **public relations**	.022	**.329 (PM)**	-.095	**-.397 (PM)**
- **salesforce promotion**	.036	**-.345 (PM)**	.157	.183
- **price level**	.049	.216	**.337 (PR)**	.109
- **breadth of assortment**	.091	.048	**-.319 (PD)**	-.101
- print-advertising	-.180	.294	-.173	-.101
- promotion expenditures	.279	-.024	-.044	.147
- direct marketing	.102	.032	.078	.279
- distribution channels	-.066	-.219	.223	.056
- trade shows	.108	-.209	.049	.003
- radio-advertising	-.083	-.055	-.100	.193
- personal selling	-.040	-.114	.014	.086
- eigenvalue	0.84	0.83	0.81	0.79
- canonical correlation	0.68	0.66	0.62	0.58

- Fit = 3.27 (out of 4)

Note: Component loadings > .30 are presented in bold

F = firm strategy	PD = product tactics
M = market strategy	D = distribution tactics
P = product strategy	PR = price tactics
	PM = promotion tactics

company's image and producing existing products at lower costs) are associated with tactical launch decisions regarding the pricing strategy and distribution expenditures. For example, firms may launch less innovative new products in mass markets with many competitors present to produce existing products at lower costs with low distribution expenditures and a penetration pricing strategy. Conversely, firms may also launch innovative new products in noncompetitive niches to increase the company's image with a skimming pricing strategy and high distribution expenditures. The most important strategic launch decisions in deriving the canonical dimension refer to target market selection and product innovativeness whereas the important tactical launch decisions involve pricing and distribution tactics. Therefore, dimension one is labeled 'targeting and distribution of price/innovativeness propositions.'

Dimension two. The second canonical dimension suggests that strategic launch decisions managers make regarding the market growth rate, product newness and two objectives (increasing company's image and establishing a foothold in a new market) are associated with tactical launch decisions regarding the branding strategy and the use of public relations and salesforce promotion. For example, firms launch repositionings in emerging fast growing market segments to increase the company's image with the company name as the brand name and public relations. Conversely, firms may also launch completely new products in slow growing markets with a new brand name and the use of personal selling. The second dimension is labeled 'branding policies depending on market growth and product newness.'

Dimension three. The third dimension suggests that the way in which managers make strategic launch decisions regarding the perception of customers, stage of the PLC, NPD cycle time and one objective (increasing market penetration) are associated with tactical launch decisions dictating the relative price level, breadth of assortment and the use of customer promotion, tv-advertising and trade promotion. One set of interrelated launch decisions would include a broad assortment of swiftly developed low-priced new products introduced in a later stage of the product life cycle to increase market penetration with the use of trade promotion. The opposite responses suggest that firms may also launch a small assortment of slowly developed high-priced incremental improvements in an early stage of the product life cycle with the use of customer promotion and tv-advertising. Dimension three is labeled 'promotion tactics depending on customer perceptions.'

Dimension four. The fourth dimension of interrelated launch decisions suggests that strategic launch decisions managers make regarding the driver of NPD and product innovativeness are associated with tactical launch decisions regarding branding and the use of customer promotion and public relations. For example, one set of launch decisions portrays moderately innovative technology-driven new products that are branded with the company name while using customer promotion. Conversely, firms may also launch market-driven innovative new products

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with the use of public relations. The fourth dimension is labeled 'promotion and branding tactics depending on the driver of NPD.'

Seven strategic launch objectives remained independent of the tactical launch decisions across the four canonical dimensions. However, apart from these seven objectives, all strategic launch decisions were related to the tactical launch decisions that the firm pursues. In addition, seven tactical launch decisions including five marketing communications instruments remained independent of the strategic posture of the launch. Taken together, 24 (63%) of the strategic and tactical launch decisions were related across the four canonical dimensions. These analyses demonstrate that a majority of the strategic and tactical launch decisions were interrelated and made in sets in the U.K..

United States. From a total of 288 products introduced in the U.S.A., 32 introductions were removed due to missing data. A one-dimensional solution described the structure in the data best. The solution fit of this one-dimensional solution was 0.90. In addition, the eigenvalue of this dimension (0.90) and the canonical correlation coefficient (0.80) were high. Table 8.6 summarizes the one-dimensional solution and shows which strategic and tactical launch decisions were related as a set.

Dimension One. Only six (16%) launch decisions were related across the canonical dimension. This dimension suggests that market growth rate, customer perceptions and two objectives (preempting an emerging market segment and producing existing products at lower costs) are interrelated with the use of radio-advertising and salesforce promotion. For example, firms may launch incremental improvements in slow growing markets with the use of salesforce promotion. This dimension is labeled 'promotion tactics following market growth and commercialization objectives.'

Seventeen strategic launch decisions including nine objectives were not systematically associated with any of the tactical launch decisions across the canonical dimension. In addition, almost all tactical launch decisions (15 out of 17) remained independent of the strategic nature of the launch. Only the use of salesforce promotion and radio-advertising differed depending upon various strategic decisions. These results demonstrate that only a small number of strategic and tactical launch decisions were related in the U.S.A..

Conclusion. The present section investigated the interrelationships between the sets of strategic and tactical launch decisions in each of the three country samples. Table 8.7 presents a comparison of the canonical structures for the three countries. This table shows large differences among the countries. For instance, two canonical dimensions were derived for the Dutch introductions, four dimensions for the U.K. introductions and a single dimension for the U.S. introductions. In addition, about 40% of the launch decisions were interrelated in the Dutch sample, 63% in the U.K. sample and only 16% of the launch decisions in the U.S. sample.

Table 8.6: Canonical component loadings for the U.S. introductions

Variable	Dimension 1 Loading	Category
Strategic Launch Decisions		
- preempt emerging segment	**.615**	**firm**
- market growth rate	**.497**	**market**
- produce at lower costs	**.354**	**firm**
- perception customers	**.324**	**product**
- product newness	.262	
- stage of the PLC	-.226	
- put up barriers	-.209	
- timing strategy	.164	
- expand product range	-.152	
- NPD cycle time	.118	
- capitalize on existing market	-.109	
- number of competitors	.101	
- offset seasonal cycle	.087	
- product innovativeness	-.083	
- driver of NPD	.077	
- capitalize on new technology	-.075	
- targeting strategy	.070	
- increase company's image	.063	
- use excess capacity	-.043	
- establish foothold	.039	
- increase market penetration	.004	
Tactical Launch Decisions		
- radio-advertising	**.448**	**promotion**
- salesforce promotion	**-.390**	**promotion**
- branding strategy	.231	
- personal selling	.218	
- pricing strategy	.216	
- distribution channels	.205	
- customer promotion	-.166	
- promotion expenditures	.143	
- direct marketing	-.137	
- tv-advertising	.107	
- public relations	.102	
- trade shows	-.084	
- distribution expenditures	.079	
- breadth of assortment	-.056	
- print-advertising	-.016	
- trade promotion	.012	
- price level	.010	
- eigenvalue	0.90	
- canonical correlation	0.80	

Fit = 0.90 (out of 1)

Note: Component loadings > .30 are presented in bold

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Table 8.7: Comparison of canonical structures for the three countries

Dimension	The Netherlands		U.K.				U.S.A.
	One	Two	One	Two	Three	Four	One
Strategic launch decisions							
Product strategy							
- perception customers	.422				.566		.324
- product innovativeness			.523			.351	
- product newness				.404			
- NPD cycle time					.321		
Market strategy							
- number of competitors	.423		.706				
- targeting strategy			.598				
- market growth rate	.463			.458			.497
- stage of the PLC					.324		
Firm strategy							
- preempt emerging segment							.615
- driver of NPD		.426				.599	
- increase penetration					.530		
- increase company's image			.448	.340			
- produce at lower costs			.418				.354
- establish foothold	.305			.386			
- timing strategy			.383				
- capitalize on technology		.369					
- capitalize on market		.333					
Tactical launch decisions							
Product tactics							
- branding strategy				.414		.332	
- breadth of assortment					.319		
Distribution tactics							
- distribution expenditures			.461				
Pricing tactics							
- pricing strategy		.513	.725				
- price level	.506				.337		
Promotion tactics							
- customer promotion	.353				.520	.453	
- radio-advertising							.448
- tv-advertising	.443				-.416		
- print-advertising	.407						
- trade promotion	.346				.400		
- public relations				.329		.397	
- trade shows	.373						
- salesforce promotion				.345			.390
- personal selling	.333						

Note: Only component loadings > 0.30 are depicted

Only two strategic launch decisions (market growth rate and customer perceptions) and none of the tactics were related in each of the three country samples. Apparently, the interrelationships between the sets of strategic and tactical launch decisions differed among countries. Therefore, Hypothesis 4_C stating that the interrelationships between the sets of strategic and tactical launch decisions would be independent of the country of introduction was rejected.

The results for the Dutch introductions showed that elements from all three strategic launch categories (i.e., product strategy, market strategy and firm strategy) were interrelated with various tactical launch decisions while only pricing and promotion tactics were related to the strategic posture of the launch. These findings suggest that product and distribution tactics were relatively independent of the strategic nature of the launch for the Dutch introductions. In the U.K., elements from all three strategic launch categories and elements from all four marketing tactics (product, distribution, pricing and promotion) were interrelated. Apparently, for the U.K. introductions, elements from all strategic and tactical launch categories were related and made in sets. In the U.S.A., only promotion tactics were related to elements from the three strategic launch categories. None of the product, pricing or distribution tactics were related to the strategic launch decisions that the firm pursues. Although elements from all strategic launch categories were interrelated in the three countries, the largest differences among the countries involved the launch tactics. In the U.S.A. only promotion tactics were interrelated, in The Netherlands pricing and promotion tactics, and in the U.K. all elements from the marketing mix.

The U.K. introductions were more often imitative me-too products launched in mature competitive markets (see Table 8.2). It may be expected that the structure among the launch decisions is more obvious for me-too products launched in mature markets than for completely new products launched in emerging markets. While several launch decisions may have been dictated by the market or by competitors for firms launching me-too products, firms launching completely new products in new markets probably possessed and used more freedom in their decision making. In addition, a majority of the U.K. introductions were market driven whereas the Dutch and U.S. introductions were more often mixed or technology driven. Apparently, the structure among the launch decisions is less obvious for mixed and technology driven products than for market driven new products. A final explanation more launch decisions were related in the U.K. sample than in the other two samples refers to the sample composition. The percentage of consumer products was significantly higher in the U.K. sample than in the other two samples. Chapter Seven showed that more decisions were related for the consumer products than for the industrial products. The finding that more decisions were interrelated in the U.K. sample than in the other two samples is consistent with this view.

8.4.2 In search of country-specific launch strategies

Cluster analysis of the canonical variate scores was used to determine whether managers systematically used the sets of interrelated strategic and tactical launch decisions. The launch strategies were identified by crosstabulating the original variables that loaded higher than .30 on the canonical dimensions by cluster membership.

The Netherlands. Cluster analyses were run on the standardized canonical variate scores for the 213 product introductions remaining after eliminating 10 observations with values further than 2.5 standard deviations from the mean. Since the loadings on both canonical variates were uncorrelated ($r = .09$, $p = .20$), the Euclidian distance measure was chosen. The dendograms using four different algorithms, the coefficients of variation and the results from the multiple discriminant analyses suggested choosing Ward's three-cluster solution.[2]

The average canonical variate scores were calculated for the three clusters (see Table 8.8). As expected, one-way analyses of variance showed that the average ratings on both canonical variates differed significantly among the clusters ($F(2,210) = 59.4$, $p < .0001$; $F(2,210) = 165.7$, $p < .0001$). Table 8.9 presents the three Dutch launch strategies.

Table 8.8: Canonical variate scores for the three Dutch clusters

	Cluster Name	Canonical Variate Score 1*	Canonical Variate Score 2*
Cluster 1 (N=34)	Diversifications	-1.44	0.85
Cluster 2 (N=109)	Market Led Improvements	0.32	0.43
Cluster 3 (N=70)	Technology Driven Penetrations	0.11	-1.11

* One-way ANOVA; $p < .0001$

Cluster 1 (N=34) is labeled the *Diversifications* launch. This cluster received a negative rating on the first and a positive rating on the second canonical variate (-1.44, 0.85), describing a group of performance improvements that were launched in high-growth competitive markets to capitalize on a new technology and to establish a foothold in a new market while using trade shows and personal selling.

Cluster 2 (N=109), referred to as the *Market Led Improvements* launch, received positive ratings on both canonical variates (0.32, 0.43). This strategy is characterized by market-driven incremental improvements that were launched with a relatively high price on existing markets.

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[2] The coefficients of variation were: 0.53 (Ward's method), 0.96 (complete linkage), 1.31 (average linkage) and 1.68 (single linkage). The percentages of correctly classified products were: 88.7%, 89.2%, 85.5% and 92.5%, respectively.

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Companies communicated the advantages of these products with trade promotion, customer promotion and print advertising. The introduction of Nintendo's Gameboy may typify this launch strategy (Hultink and Wong, 1993). This product was relatively high priced, market-driven and an improvement over existing portable electronic games. A combined push and pull marketing communications effort stimulated consumer demand for this new consumer durable.

Table 8.9: A typology of Dutch launch strategies

Decision	Cluster 1 *Diversifications* N = 34 *level*	Cluster 2 *Market Led Improvements* N = 109 *level*	Cluster 3 *Technology Driven Penetrations* N = 70 *level*
Strategic Launch Decisions			
- Perception customers	performance improvement	incremental improvement	
- Market growth rate	more than 10%		
- Number of competitors	more than 4		
- Driver of NPD		mainly market driven	technology driven
- Objectives	capitalizing on new technology foothold in new market	capitalizing on existing market	
Tactical Launch Decisions			
- Price level		higher	lower
- Pricing strategy		other	penetration
- Communication channels	trade shows personal selling	trade promotion customer promotion print advertising	

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulation.

Cluster 3 (N=70) is the *Technology Driven Penetrations* strategy. This strategy received positive ratings on the first and negative ratings on the second canonical variate (0.11, -1.11), producing a set of technology-driven new products launched into the market with a low-price penetration strategy. None of the objectives or marketing communications instruments were associated with this strategy.

Several characteristic differences were visible across the three Dutch launch strategies. Products launched with a *Diversifications* strategy were performance improvements whereas *Market Led Improvements* were more often incremental improvements. In addition, while *Market Led Improvements* were high priced and based on market needs, *Technology Driven Penetrations* were relatively lower priced and the result of technological possibilities. Finally,

Diversifications were launched to establish a foothold in a new market whereas *Market Led Improvements* were launched in existing markets.

United Kingdom. The cluster analyses were run on the standardized canonical variate scores for the 445 product introductions remaining after eliminating 45 observations with values further than 2.5 standard deviations from the mean. The dendograms, coefficients of variation and the results from the multiple discriminant analyses suggested choosing Ward's three-cluster solution.[3]

The average canonical variate scores were calculated for the three clusters (see Table 8.10). One-way analyses of variance showed that the average ratings on the four canonical variates differed significantly among the clusters $(F(2,442) = 184.3, p < .0001; F(2,442) = 33.2, p < .0001; F(2,442) = 3.97, p < .05; F(2,442) = 202.2, p < .0001)$. Table 8.11 presents the three U.K. launch strategies.

Table 8.10: Canonical variate scores for the three U.K. clusters

	Cluster Name	Canonical variate score 1**	Canonical variate score 2**	Canonical variate score 3 *	Canonical variate score 4**
Cluster 1 (N=214)	Fast Imitations	0.23	-0.10	-0.05	-0.61
Cluster 2 (N=56)	Skimming Nichers	-1.38	-0.76	0.19	0.26
Cluster 3 (N=175)	Selective Penetrations	0.46	0.17	0.17	0.74

** One-way ANOVA; $p < .0001$
* One-way ANOVA; $p < .05$

Cluster 1 (N=214), referred to as the *Fast Imitations,* received positive ratings on the first and negative ratings on the other canonical variates (0.23, -0.10, -0.05, -0.61), describing a group of relatively more innovative swiftly developed improvements launched in declining competitive markets by fast imitators who combined technological possibilities with market needs. Distribution expenditures and price level were equal to competitors' while a new brand name was developed for these new products. Finally, products launched with this strategy relied more often on public relations to attract customer attention.

Cluster 2 (N=56) is labeled the *Skimming Nichers* launch. This strategy received negative ratings on the first and second and positive ratings on the third and fourth canonical variate (-1.38, -0.76, 0.19, 0.26), producing a new line of more innovative swiftly developed performance improvements launched by technological innovators in a niche market with less

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[3] The coefficients of variation were: 0.56 (Ward's method), 1.15 (complete linkage), 1.48 (average linkage) and 1.72 (single linkage). The percentages of correctly classified products were: 89.9%, 87.6%, 93.0% and 95.7%, respectively.

than three competitors present to increase market penetration and the company's image. These products were launched with relatively high distribution expenditures and a high-price skimming strategy.

Table 8.11: A typology of U.K. launch strategies

	Cluster 1 *Fast Imitations* N = 214	Cluster 2 *Skimming Nichers* N = 56	Cluster 3 *Selective Penetrations* N = 175
Decision	*level*	*level*	*level*
Strategic Launch Decisions			
- Product innovativeness	more innovative	more innovative	equally innovative
- NPD cycle time	6 months - 1 year	less than 6 months	more than 3 years
- Product newness		new product line	
- Perception customers	incremental improvement	performance improvement	performance improvement
- Market growth rate	less than 0%	5% - 10%	
- Stage of the PLC			growth stage
- Targeting strategy		niche	selective
- Number of competitors	more than 4	less than 3	
- Driver of NPD	market or technology driven		mix market/technology
- Timing strategy	fast imitator	technological innovator	
- Objectives		increase penetration increase company's image	increase penetration produce at lower costs
Tactical Launch Decisions			
- Branding strategy	new brand		company name
- Distribution expenditures	same	higher	lower
- Price level	same	higher	lower
- Pricing strategy	other	skimming	penetration
- Communication channels	public relations		trade promotion customer promotion

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulation.

Cluster 3 (N=175) portrays *Selective Penetrations*. This strategy received positive ratings on all four canonical variates (0.46, 0.17, 0.17, 0.74), resulting in set of mixed (market and technology) driven equally innovative performance improvements that were slowly developed and launched with a selective targeting strategy in the growth stage of the product life cycle to increase market penetration and to produce existing products at lower costs. Tactical launch decisions associated with this strategic posture were the company brand name, lower distribution expenditures, a low-price penetration strategy and the use of trade and customer promotion.

Several characteristic differences appeared across the three U.K. launch strategies. For example, *Fast Imitations* and *Skimming Nichers* were more innovative than competitors' efforts whereas *Selective Penetrations* were equally innovative. While *Fast Imitations* were incremental improvements, *Skimming Nichers* and *Selective Penetrations* offered performance improvements. Several differences were also found for the tactical launch decisions. For example, distribution expenditures and average price level were lower than for competitors' products for the *Selective Penetrations*, about the same for the *Fast Imitations* and higher for the *Skimming Nichers*. Finally, *Skimming Nichers* followed a skimming pricing strategy, *Selective Penetrations* a penetration strategy and the *Fast Imitations* not a skimming nor a penetration (i.e., an other) strategy.

United States. Since the structure among the strategic and tactical launch decisions for U.S. introductions was reduced to a single dimension, it was not possible to rely on cluster analysis to derive clusters of products with similar launch strategies. Identically to the analyses for the industrial products in Chapter Seven, it was decided to form three 'clusters.' The ratings on the canonical variate were in the range of -2.99 to 4.19. The products in the bottom-third cluster (N=84) received canonical variate ratings in the range of -2.99 to -0.52, in the middle-third cluster (N=86) in the range of -0.51 to 0.25 and in the top-third cluster (N=86) in the range of 0.26 to 4.19.[4]

The bottom and top-third cluster were contrasted. This procedure derived one cluster of products that received positive ratings on the canonical variate, and one cluster of products that received negative ratings on the canonical variate. A t-test for investigating the equality of means showed that the ratings on the canonical variate differed significantly between both clusters ($t_{127.40}$= 20.7, p < .0001). Table 8.12 presents the two U.S. launch strategies.

Cluster 1 (N=84) received a negative rating on the canonical variate (-1.08), producing a set of new products that were launched with the use of salesforce promotion in low-growth markets. This strategy is labeled the *Low Growth Sales Promotions*. Cluster 2 (N=86) received a positive rating on the canonical variate (1.24). Therefore, this strategy is characterized by completely new products that were launched in high-growth emerging markets to produce existing products at lower costs while using radio-advertising to communicate the advantages of the new product. This strategy is labeled the *Preempting Cost Reductions*.

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4 The groups were constructed following the procedure employed to interpret the industrial launch strategies in Chapter Seven. The interpretation of the dimension made sense only for a limited number of products because most introductions centered around the midpoint of this dimension.

Table 8.12: A typology of U.S. launch strategies

Decision	Cluster 1 Low Growth Sales Promotions N = 84 level	Cluster 2 Preempting Cost Reductions N = 86 level
Strategic Launch Decisions		
- Perception customers		completely new
- Market growth rate	less than 5%	more than 10%
- Objectives		preempt emerging segment produce at lower costs
Tactical Launch Decisions		
- Communication channels	salesforce promotion	radio-advertising

Note: Entries refer to launch decision levels with an adjusted residual higher than +2 after crosstabulation.

Conclusion. The present section derived launch strategies for the Dutch, U.K. and U.S. introductions by clustering new products on the country-specific canonical variate scores. Three launch strategies were found in The Netherlands and in the U.K. while the procedure discussed above derived two launch strategies in the U.S.A.. The country-specific launch strategies differed to a large degree mainly because the canonical structures were dissimilar among countries. The Dutch and U.K. launch strategies could be adequately described in terms of their canonical structures. Several characteristic differences were found among the launch strategies that could be explained in terms of the canonical dimensions. This was more problematic for the U.S. introductions because less structure was found between the sets of strategic and tactical launch decisions in the U.S. data. Whether the derived launch strategies differed in terms of new product performance will be dealt with next.

8.4.3 Performance implications of the launch strategies

The proportion of successful new products, the mean ratings for each of the 15 new product performance indicators, and overall performance for each strategy were calculated. The performance of the launch strategies was also compared on the three dimensions of new product performance derived in Chapter Six: market acceptance, financial performance and product performance.[5]

[5] Principal components analyses on the 15 performance measures for the country samples resulted in solutions that were highly comparable to the solution for the total sample.

The Netherlands. Performance differences among the three Dutch launch strategies depended on the dimension of new product performance (see Table 8.13). *Market Led Improvements* received significantly higher ratings on the market acceptance dimension of new product performance than the *Technology Driven Penetrations.* However, no significant differences were found among the strategies with regard to the overall success ratio, overall performance level, and with regard to the financial and product dimensions of new product performance.

Table 8.13: Dutch launch strategies and performance implications

Performance Measure	Cluster 1 N = 34 *Diversifi- cations*	Cluster 2 N = 109 *Market Led Improvements*	Cluster 3 N = 70 *Technology Driven Penetrations*	*p*<.05
Overall Success Ratio (61.0%)	58.8%	64.2%	57.1%	N.S.
Overall Performance* (4.6)	4.2	4.8	4.3	N.S.
Market Acceptance (4.2)	4.1	4.5	3.7	2>3
- Revenue goals (4.2)	4.2	4.6	3.8	N.S.
- Unit sales goals (4.1)	4.2	4.5	3.5	2>3
- Revenue growth goals (4.1)	4.0	4.4	3.7	N.S.
Financial Performance (4.4)	3.9	4.7	4.2	N.S.
- Margin goals (4.7)	4.3	5.1	4.5	N.S.
- Break-even time (4.3)	3.8	4.5	4.1	N.S.
- IRR/ROI (4.2)	3.7	4.6	4.0	N.S.
Product Performance (4.7)	4.2	4.9	4.6	N.S.
- Launched on time (4.9)	4.5	5.0	4.9	N.S.
- Speed to market (4.5)	3.9	4.7	4.3	2>1
Additional Indicators				
- Product performance (5.4)	5.3	5.6	5.1	N.S.
- Meeting quality goals (5.4)	5.0	5.7	5.1	2>3
- Customer satisfaction (5.1)	4.6	5.5	4.7	2>1,3
- Customer acceptance (4.8)	4.3	5.1	4.7	N.S.
- Development costs (4.8)	4.0	5.1	4.6	2>1
- Attain profitability goals (4.2)	3.7	4.5	3.8	N.S.
- Met market share goals (4.1)	4.0	4.4	3.8	N.S.

Note: Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true *N* per ANOVA varies because of missing values. The last column indicates the Post-hoc Scheffé test of significance to control for multiple comparisons. Entries within parentheses refer to the total sample.

* Mean of the 15 performance criteria

Market Led Improvements received significantly higher ratings on the market acceptance dimension of new product performance than the *Technology Driven Penetrations* mainly because they achieved higher ratings on meeting unit sales goals. Since the new products launched with

the *Market Led Improvements* strategy were mainly market driven, this finding may not be so surprising. Apparently, a strong market orientation during the NPD process is positively related to the market acceptance dimension of new product performance but not necessarily to the other two dimensions of new product performance.

Overall, the ratings on five of the 15 performance measures were significantly different among the strategies. *Market Led Improvements* received significantly higher ratings on meeting quality guidelines and meeting unit sales goals than the *Technology Driven Penetrations* and higher ratings on speed to market and staying within the development cost budget than the *Diversifications*. Finally, *Market Led Improvements* received significantly higher ratings on customer satisfaction than the other two strategies.

Apparently, market driven new products attained higher ratings on meeting quality guidelines than technology driven new products. In addition, market driven improvements that are launched in existing markets were better able to stay within the development cost budget and were faster to market than performance improvements that capitalize on a new technology and aim to establish a foothold in a new market. An explanation for the latter finding may be that technological and marketing synergies were higher for products launched with the *Market Led Improvements* strategy than for products launched with the *Diversifications* strategy. Firms launching *Diversifications* had no experience with the technology nor with the market for the new product. Apparently, these conditions resulted in more expensive and longer development cycles.

United Kingdom. The three U.K. launch strategies were associated with significantly different levels of new product performance. As Table 8.14 shows, the percentage of successful new products was significantly higher for the *Skimming Nichers* than for the *Selective Penetrations*. Of the 56 products launched with the *Skimming Nichers* strategy, 71.4% were successful compared to a 50.9% success rate for the *Selective Penetrations*. In addition, overall performance and the ratings on the three dimensions of new product performance (market acceptance, financial performance and product performance) were significantly higher for the *Skimming Nichers* than for the *Selective Penetrations*.

Other significant differences among the three launch strategies depended on the performance measure chosen. *Fast Imitations* and *Skimming Nichers* received significantly higher ratings than the *Selective Penetrations* on product performance level and customer acceptance. In addition, *Skimming Nichers* received significantly higher ratings than the other two strategies on revenue goals, unit sales goals and break-even time. On average, the performance of the *Skimming Nichers* was rated the highest across the three strategies. This launch strategy was the most successful strategy for launching new products in the U.K. regardless of the way in which success is operationalized.

Table 8.14: U.K. launch strategies and performance implications

Performance Measure	Cluster 1 N=214 Fast Imitations	Cluster 2 N=56 Skimming Nichers	Cluster 3 N=175 Selective Penetrations	p<.05
Overall Success Ratio (58.2%)	60.7%	71.4%	50.9%	2>3
Overall Performance* (4.1)	4.1	4.6	3.8	2>3
Market Acceptance (3.9)	3.9	4.5	3.7	2>3
- Revenue goals (4.0)	4.0	4.8	3.8	2>1,3
- Unit sales goals (3.9)	3.9	4.5	3.7	2>1,3
- Revenue growth (3.8)	3.9	4.2	3.5	N.S.
Financial Performance (3.7)	3.7	4.2	3.4	2>3
- Margin goals (3.9)	4.0	4.4	3.7	2>3
- Break-even time (3.5)	3.6	4.3	3.2	2>1>3
- IRR/ROI (3.5)	3.6	4.0	3.3	2>3
oduct Performance (3.6)	3.6	4.3	3.3	2>3
- Launched on time (3.7)	3.7	4.4	3.5	2>3
- Speed to market (3.5)	3.5	4.1	3.2	2>3
Additional Indicators				
- Product performance (5.2)	5.3	5.7	4.9	1,2>3
- Meeting quality goals (5.1)	5.1	5.3	5.0	N.S.
- Customer satisfaction (5.0)	5.1	5.3	4.8	2>3
- Customer acceptance (4.7)	4.8	5.1	4.4	1,2>3
- Attain profitability goals (4.0)	4.0	4.6	3.8	2>3
- Market share goals (3.8)	3.8	4.5	3.6	2>3
- Development costs (3.5)	3.6	3.9	3.3	N.S.

Note: Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true N per ANOVA varies because of missing values. The last column indicates the Post-hoc Scheffé test of significance to control for multiple comparisons.

* Mean of the 15 performance criteria

United States. The two U.S. launch strategies were not associated with significantly different levels of new product performance (see Table 8.15).[6] The overall success ratio was higher for the Preempting Cost Reductions than for the Low Growth Sales Promotions (57.0% versus 52.4%), but this difference was not statistically significant. In addition, the average ratings of both strategies on the overall performance level, on the three dimensions of new product performance, and on 14 (out of 15) performance measures were not significantly different.

6 There were also basically no differences in performance among the three groups identified before. Only two out of 15 performance indicators differed significantly (IRR/ROI and quality were higher for the first and second than for the third group). This result obtained regardless of how the three groups were constructed, i.e., using three groups of equal size or splitting the sample ± one standard deviation from the mean.

Table 8.15: U.S. launch strategies and performance implications

Performance Measure	Cluster 1 N = 84 Low Growth Sales Promotions	Cluster 2 N = 86 Preempting Cost Reductions	p<.05
Overall Success Ratio (54.7%)	52.4%	57.0%	N.S.
Overall Performance* (4.1)	4.2	4.0	N.S.
Market Acceptance (3.7)	3.7	3.7	N.S.
- Revenue goals (3.8)	3.8	3.8	N.S.
- Unit sales goals (3.8)	3.7	3.8	N.S.
- Revenue growth (3.6)	3.5	3.6	N.S.
Financial Performance (3.7)	3.7	3.6	N.S.
- Margin goals (3.9)	4.0	3.8	N.S.
- Break-even time (3.7)	3.7	3.7	N.S.
- IRR/ROI (3.4)	3.4	3.4	N.S.
Product Performance (4.3)	4.3	4.1	N.S.
- Launched on time (4.4)	4.5	4.3	N.S.
- Speed to market (4.1)	4.2	3.9	N.S.
Additional Indicators			
- Product performance (5.1)	5.3	5.0	N.S.
- Meeting quality goals (5.0)	5.3	4.7	1>2
- Customer satisfaction (4.7)	5.0	4.5	N.S.
- Customer acceptance (4.5)	4.5	4.6	N.S.
- Attain profitability goals (3.6)	3.8	3.5	N.S.
- Market share goals (3.7)	3.6	3.9	N.S.
- Development costs (4.5)	4.7	4.4	N.S.

Note: Entries for performance measures are means from a scale with '1' indicating that the criterion has not been met at all, and '7' indicating that a criterion has been met completely; true N per ANOVA varies because of missing values. The last column indicates the Post-hoc Scheffé test of significance to control for multiple comparisons.

*   Mean of the 15 performance criteria

Only one significant difference emerged: *Low Growth Sales Promotions* received higher ratings on meeting quality guidelines than the *Preempting Cost Reductions*. Apparently, it was more difficult to meet quality guidelines for completely new products targeted at emerging market segments than for the *Low Growth Sales Promotions*.

Conclusion. The present section investigated the performance implications of the country-specific launch strategies. Largest performance differences among the strategies were found in the U.K. and smallest performance differences in the U.S.A.. The performance ratings of the Dutch launch strategies were only significantly different on the market acceptance performance dimension and on four other indicators of new product performance. These findings are not surprising. The associations between the sets of strategic and tactical launch decisions were large

in the U.K. and small in the U.S.A.. Many launch decisions were interrelated across the four canonical dimensions in the U.K. while only six launch decisions were related across the canonical dimension in the U.S.A.. Because the launch strategies were derived by clustering the introductions on those interrelated launch decisions (i.e., on the canonical variate scores), it is not surprising that the differences among the U.K. launch strategies with respect to the launch decisions made were larger than between the U.S. launch strategies. Consequently, the performance differences were larger in the U.K. than in the U.S.A..

8.5   Conclusions and implications

The present chapter investigated whether launch decisions and strategies differed among countries. The analysis of introductions in The Netherlands, the U.K. and the U.S.A. suggests that this is the case.

The univariate analyses in section 8.3 showed that most strategic and tactical launch decisions differed among countries. With regard to the strategic launch decisions, the Dutch introductions were more often innovative, mixed-driven and launched by cost reducing companies with mass market strategies in declining markets. Apparently, companies introducing new products in The Netherlands aimed to minimize costs. To benefit from economies of scale in a small country like The Netherlands, mass market strategies were necessary. In addition, it was not surprising that the new products were innovative since the new products were partly based on technological possibilities.

Products that were introduced in the U.S.A. were more often technology driven, innovative and launched by technological innovators with niche targeting strategies in emerging high growth markets with the objective of using new technologies. Companies introducing new products in the U.S.A. were more often technology driven and aimed to be first to market with new technologies. The market strategy for the new products was in line with the objectives for the new products. Since the objectives were to establish a foothold in a new market and to use new technologies, the launch effort was well-targeted with new technologies at those fast growing emerging market niches.

Finally, products that were introduced in the U.K. were more often launched for defensive reasons in established markets that were well-known to the firm. The U.K. introductions were not innovative nor swiftly developed. This may not have been necessary because the objectives for these introductions were defensive rather than offensive. To summarize, strategic launch decisions differed among countries. The findings suggest that firms launch different types of new products with different market strategies for different reasons in different countries. Previous

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chapters showed that strategic and tactical launch decisions were interrelated. Therefore, it was expected that several significant differences were also found when the tactical launch decisions were considered.

The Dutch introductions, for example, were more often launched in broad assortments, carrying the company name, high-priced, distributed through new distribution channels with low distribution expenditures and communicated with high promotion expenditures through personal selling and public relations. The high level of innovativeness of the new products launched in The Netherlands probably justified the higher prices charged for these new products. In addition, the products were aimed at emerging market segments. Therefore, new distribution channels were needed to reach these new customers while high promotion expenditures and personal selling were necessary to explain the advantages of the new product. Finally, the new products carried the company name to establish credibility in the new market segment.

Products that were introduced in the U.S.A. were more often launched in broad assortments, carrying a new brand name, skimming high-priced, distributed through new distribution channels with high distribution expenditures and communicated through public relations. Several of these tactical launch decisions were similar to the tactical launch decisions for the Dutch introductions, and many seem to be related to the strategic posture for the U.S. introductions. First, the products were completely new and first to market which makes skimming high-price strategies more appropriate. In addition, for completely new products, it is probably easier to generate public relation attention than for less innovative new products. Finally, a new brand name was developed for these products to position the new product in the marketplace and to prevent damaging the company name in case the new product would not succeed.

Finally, the products that were introduced in the U.K. were more often brand extensions, penetration low-priced, distributed through current distribution channels with similar distribution expenditures as competitors' and communicated with similar promotion expenditures as competitors' through salesforce, customer and trade promotion and by using trade shows. These tactical launch decisions were different from the tactical launch decisions used for the Dutch and U.S. introductions. Since the new product introductions in the U.K. were equally or less innovative than competitors' efforts, prices were kept low to stimulate customer demand. In addition, salesforce, customer and trade promotion were necessary to attract attention for the new products from the salesforce, resellers and customers. Finally, current distribution channels were sufficient to sell these new products because resellers already possessed the necessary knowledge to explain the advantages of the new products to final customers.

The results discussed above showed that new products that were introduced in the three countries differed with regard to the strategic and tactical launch decisions made. While new products that were introduced in The Netherlands and in the U.S.A. were more innovative, high-

priced and launched for offensive reasons, introductions in the U.K. were less innovative, lower-priced and launched for defensive reasons. Hofstede (1992) found that people in The Netherlands feel more comfortable in unstructured situations, and are more oriented toward the future than people in the U.K. or in the U.S.A.. This finding may partly explain launch differences between The Netherlands and the U.K.. It is possible that Dutch people are more receptive to innovative new products than people in the U.K. who may favor incremental improvements. It is unclear from the present data why U.S. introductions were also more innovative than the U.K. introductions. One explanation may be the sample composition: The percentage of industrial products was higher in the U.S.A. than in the U.K.. This may have contributed to the fact that U.S. introductions were more innovative than the U.K. introductions because industrial products were more often more innovative than consumer products (see Chapter Seven). Economic conditions in the three countries when the data were collected may be a final reason launch decisions differed among countries. Especially the U.K. went through a depression in the late Eighties and early Nineties. These conditions probably favored defending current market positions with less innovative products than searching for new markets with completely new products.

The interrelationships between the sets of strategic and tactical launch decisions also differed to a large degree among countries. Two canonical dimensions were derived for the Dutch introductions, four for the U.K. introductions and only one for the U.S. introductions. In the U.K., most launch decisions were associated across the canonical dimensions suggesting that many launch decisions are made in sets in the U.K. In contrast, hardly any of the strategic and tactical launch decisions were associated in the U.S.A. suggesting that few launch decisions are interrelated and made in sets in this country. Finally, introductions in The Netherlands took an intermediate position suggesting that an intermediate number of launch decisions are made in sets in The Netherlands. In addition, the launch strategies and the performance achievements of those launch strategies differed among countries. Three launch strategies were derived for the Dutch and U.K. introductions and two strategies for the U.S. introductions. Hardly any performance differences were found between the two U.S. strategies whereas the performance of the three U.K. strategies differed on each dimension of new product performance and overall. The Dutch launch strategies only differed on the market acceptance performance dimension and on four other indicators of new product performance.

It is possible that more launch decisions were interrelated in the U.K. sample than in the other two samples because of the sample composition: The percentage of consumer products was significantly higher in the U.K. sample than in the other two samples. Because Chapter Seven showed that more decisions were interrelated for the consumer products than for the industrial products, it was expected that more decisions were interrelated in the U.K. sample than in the

other two samples. In addition, it is possible that the structure among the launch decisions was more obvious for U.K. introductions because these introductions were less innovative and launched in more mature markets than the introductions in the other two countries. Apparently, companies possess and use more freedom when launching completely new products in emerging markets.

9.   DISCUSSION AND IMPLICATIONS

Successful new products are important for companies' commercial health and survival. How-
ever, many new products fail. Previous studies have shown that whether a new product becomes
a success or failure in the market is partly determined by how well the launch is planned and
executed (see, for instance, Cooper, 1979; Frambach, 1993). A new product can be unique,
superior, and potentially loved by customers but fail due to a poor launch (Ottum, 1996). For
example, distribution could be insufficient, advertising ineffective, or competitors too strong.
Surprisingly, although many authors agree that the launch strategy is important, it is less well
understood how specific launch decisions are related to new product performance.

   At the outset of the present research project, the literature on launch strategies was small
and contained several shortcomings. First, these studies included only a small set of launch
decisions in their investigations or did not acknowledge the multidimensional nature of new
product performance. In addition, previous studies did not address differences in launch
decisions between consumer and industrial products and among countries of introduction.
Finally, previous research had not investigated interrelationships among strategic and tactical
launch decisions despite of the suggested relevance of developing internally consistent launch
strategies (Biggadike, 1979; Kotler, 1994; Wind, 1982).

   To address these problems, the present research project formulated and tested ten
hypotheses. Differences in launch decisions between successful and unsuccessful products were
tested in Chapter Five, interrelationships among the strategic and tactical launch decisions and
the impact of sets of related launch decisions on new product performance in Chapter Six,
differences in launch decisions and strategies between consumer and industrial products in
Chapter Seven, and differences in launch decisions and strategies among countries of
introduction in Chapter Eight. First, the key findings will be summarized. Then, implications of
the present study for researchers, managers and product developers will be discussed.

9.1   Summary of key findings

The present study defined a launch strategy as consisting of those strategic and tactical marketing
decisions that a firm makes to present a new product to its target market and which contribute to
the new product's ultimate success or failure (adapted from Green and Ryans, 1990). Strategic
launch decisions referred to the project's product, market and firm strategies (for example, the
objectives and targeting of the new product launch) whereas the tactical launch decisions

represent the marketing mix decisions (product tactics, distribution, pricing and promotion). The strategic launch decisions set the strategic context into which the new product ultimately will be launched and govern key elements of the tactical launch. For example, Stryker (1996) argued that strategic launch decisions such as target market selection and project objectives should serve as inputs and levers for the tactical launch.

To test the ten hypotheses formulated in the present research project, data were collected on 21 strategic launch decisions, 17 tactical launch decisions and 15 new product performance indicators for 1,022 new product introductions in The Netherlands, the U.K. and the U.S.A.. The following relevant and actionable findings were derived from the research:

1. Different strategic and tactical launch decisions were associated with successful and unsuccessful products (supporting Hypothesis 1_A and 1_B);
2. Strategic launch decisions were associated with the tactical launch decisions, and these sets of related launch decisions contributed to new product performance (supporting Hypothesis 2_A and 2_B);
3. Different strategic and tactical launch decisions were associated with consumer and industrial products (supporting Hypothesis 3_A and 3_B);
4. Different associations among the strategic and tactical launch decisions appeared for the consumer and industrial new products (rejecting Hypothesis 3_C);
5. Strategic and tactical launch decisions differed among countries of introduction (supporting Hypothesis 4_A and 4_B); and
6. The associations among the launch decisions differed among countries of introduction (rejecting Hypothesis 4_C).

Thus, eight out of ten hypotheses were supported by the data. Strategic and tactical launch decisions differed with regard to product outcome (successful or unsuccessful), main served market and country of introduction. In addition, strategic and tactical launch decisions were associated and sets of related launch decisions contributed to new product performance. However, the interrelationships among the strategic and tactical launch decisions differed between product type (consumer or industrial) and among countries of introduction. These findings will be discussed in more detail below.

Differences in launch decisions between successful and unsuccessful products
Chapter Five investigated whether successful and unsuccessful new products differed with regard to the strategic and tactical launch decisions. The average successful new product was more innovative, launched in mature somewhat competitive markets and offered major

improvements over existing products. In contrast, the average unsuccessful new product was moderately innovative but slowly developed and launched in low-growth competitive markets. Crosstabulating the strategic and tactical launch decisions with new product outcome, successful or unsuccessful, showed that the findings were significantly different in most cases. Therefore, launch decisions mattered in attaining new product success. The results suggested that firms should launch a broad assortment of innovative, swiftly developed improvements in moderately growing noncompetitive niches in the maturity stage of the product life cycle with high promotion expenditures and moderate distribution expenditures to enhance the probability of new product success (see Tables 5.4 and 5.5).

The present findings supported the current and increasing interest in shortening product development cycle times (see, for instance, Griffin, 1993, 1997). However, the results also showed that there may be an optimum involved in reducing cycle time. Products that were developed in less than six months were not associated with successful products in contrast to products that were developed between six months and three years. Apparently, decreasing cycle times beyond the optimum may reduce the new product's quality, reliability and distinctiveness. In addition, although several authors have discussed the advantages of being first to market (Ali, 1994; Alpert and Kamins, 1995; Carpenter and Nakamoto, 1989; Golder and Tellis, 1993; Kerin, Varadarajan and Peterson, 1992; Robinson, Fornell and Sullivan, 1992), the present results showed that being second to fourth may be more promising. This finding supports earlier findings by Kalish and Lilien (1986), Lilien and Yoon (1990), Olleros (1986) and Schnaars (1994) who suggest that firms who improve upon the innovators' new products have higher chances of success. Early followers probably benefitted from market changes, innovators' mistakes or leapfrogged the performance of the innovators' new products.

Firms who launched improvements through current distribution channels in mature established markets that were well-known by the firm were more successful than firms launching completely new products through new distribution channels. These findings agree with Ansoff (1965) in that market penetration and product development strategies were less risky than market development and diversification strategies. In addition, these findings echoed the recommenda-tions provided in the literature on developing new products that benefit from the firm's existing R&D, manufacturing and marketing skills (see, for instance, Cooper, 1979, 1996). Apparently, high synergy levels were required to attain new product success, a conclusion that supported Cooper (1996) who reported that firms should be aware of the unknown because many step-out projects tend to fail.

Further, the results suggested that firms should launch new products at parity price with incumbent products while spending more on promotion. These findings which partially support-ed earlier findings is different from the four options for launching new products discussed by

Kotler (1994). Kotler (1994) provided four launch strategy examples depending on the relative price and promotion levels during new product launch: rapid skim (higher price, high promotion), slow skim (higher price, low promotion), rapid penetration (lower price, high promotion), and slow penetration (lower price, low promotion). The present results suggested that new product success is most likely when prices are equal to competing products while communication expenditures are relatively higher (i.e., a rapid parity strategy).

Some of the present findings differed from earlier findings in the NPD literature. For example, several studies suggested that products should be launched in high-growth markets in an early stage of the product life cycle while the present study found that introductions in moderately growing markets in the maturity stage of the product life cycle were more successful. A possible explanation for this finding is that customers are better able to articulate their needs in later stages of the product life cycle than in the early more fluid stages because in later stages customers may have seen similar products in the product category (i.e., reference products) against which they can compare the performance of the new product.

In addition, previous studies found that the scale of market entry should be broad whereas the present research project found that niche strategies were more successful than mass-market strategies. An explanation for this finding is that competitor reactions to a small scale launch may be less severe than those to a large scale launch (Bowman and Gatignon, 1995; Heil and Walters, 1993; Robinson, 1988). Another explanation may be the market conditions at the time when those previous studies were conducted. Most studies recommending mass-market strategies were based on the PIMS data (Buzzell and Gale, 1987) collected about 15 years ago, and thus preceded the recent fragmentation of many markets which simplifies niche targeting strategies. Finally, earlier studies found that lower prices contributed to new product performance while the present results showed that lower prices were associated with unsuccessful products. These findings suggest that despite the low price there was no incentive for customers to purchase these new products. In this respect, Cooper (1996) mentioned that where the competitive advantage of a new product is based on a low price alone, success rates drop.

Comparing the findings across subsamples showed that the findings were largely consistent between the consumer and industrial samples. However, several differences appeared among countries (see Table 5.6). For instance, few launch decisions were associated with higher success in The Netherlands and in the U.S.A., while in the U.K. many launch decisions were related to new product success.

Three launch decisions were consistently related with new product success in all three countries: relative product innovativeness, product newness and breadth of product assortment. These three product decisions (two strategic and one tactical) may be called core launch determinants of new product success. These core launch determinants of new product success

suggest that firms should launch a broad assortment of innovative but not completely new products into the market. Apparently, new products should be relevantly different from existing products to attain new product success in each country. These differences refer to, for example, improved performance, better designs or new relevant features (see Thoelke (1996) for a critical review of the importance of new product features in NPD). However, firms should be aware of the risks of launching completely new products into the market. Completely new products may be too complex for customers, a factor that limits new product adoption (Rogers, 1983). Finally, broad assortments may be necessary to cover customer preferences and budgets.

Besides this set of core success determinants, the results also suggest that each country requires its own additional set of performance determinants. These findings may partly explain why new products were launched differently in the three countries (see Chapter Eight and below) supporting Hypotheses 4_A and 4_B. In addition, if the impact of some launch decisions on new product performance differs among countries, international marketing strategies based on these launch decisions may be less appropriate for launching new products in different countries. It may be necessary to adapt launch decisions depending on the country of introduction. In this respect, it is probably not the product that needs to be adapted for each country to attain success (i.e., the product needs to be innovative but not completely new) but the decisions from the other launch categories (for example, the market strategy or the distribution, pricing and promotion tactics).

Relationships among the strategic and tactical launch decisions

Two sets of launch decisions were distinguished in the present research project: strategic and tactical launch decisions. Marketing theory and previous empirical findings suggested that strategic launch decisions occur prior to making the tactical launch decisions, and prior even to beginning development. These decisions govern the *why to launch* (objectives), *when to launch* (timing), *where to launch* (target market selection) and *what to launch* (product newness). The tactical launch decisions involve the marketing mix decisions (product tactics, distribution, pricing and promotion) and govern the *how* of the launch.

Several authors have discussed the relevance of investigating the relationships among strategic and tactical launch decisions as both sets of variables effect the nature of the overall launch strategy (Biggadike, 1979; Hisrich and Peters, 1991; Ottum, 1996; Stryker, 1996; Urban and Hauser, 1993; Wind, 1982). For example, Stryker (1996) argues that strategic launch decisions should serve as inputs and levers for the tactical launch decisions whereas Ottum (1996) mentions that proper tactical launch decisions should capitalize on the strengths that were built into the new product during project definition and development. Finally, Hisrich and Peters (1991) argue that strategic launch decisions made at an early stage of the NPD process impact

which of the tactical launch decisions are most likely to maximize profitability over the product's life cycle.

Chapter Six showed that a majority of the strategic and tactical launch decisions were related across two dimensions. The first dimension described how companies change their tactical launch decisions over different stages of the product life cycle, whereas the second dimension showed how companies attack or defend current market positions by employing distribution and promotion tactics. The first dimension was consistent with how product life cycle theory postulates marketing mix decisions should change over the product life cycle. In early stages of the product life cycle when products are new and unique and few competitors are around, skimming high-price strategies are most appropriate. In contrast, in later stages of the product life cycle when markets are competitive and new products tend to be reformulations, penetration low-price strategies are more common. The second dimension showed how firms defend current market positions with less innovative new products launched through current distributors while new competitive markets were targeted with innovative new products through new distributors.

The first dimension featured elements from all three strategic categories (i.e., product strategy, market strategy and firm strategy) and pricing, promotion and product tactics whereas the second dimension portrayed the three strategic categories and promotion and distribution tactics. Overall, elements from all strategic and tactical launch categories were associated across the dimensions showing that strategic and tactical launch decisions are related and made in sets. These findings suggest that companies must keep launch tactics in consonance with the three strategic aspects of the launch. For example, choosing a particular newness strategy or targeting high-growth noncompetitive markets may determine the appropriate pricing tactics or marketing communications instruments that should be implemented.

Cluster analyses provided insight into how managers systematically used sets of related launch decisions. Three generic launch strategies were derived that differed in terms of performance. The *Offensive Improvements* strategy appeared to be most successful although it was used for relatively few introductions. This strategy described how improvements were launched into noncompetitive markets to put up competitive barriers. Tactical launch decisions associated with this strategy were broad assortments, high distribution expenditures, high prices and the use of current distribution channels, customer promotion and tv-advertising. The financial performance ratings of the *Technological Innovations* strategy (i.e., a strategy of launching technology-driven innovative high-priced new products in the introduction stage of the life cycle) were similar to the *Offensive Improvements* strategy, although overall this strategy ranked second in performance. Most introductions were launched with the *Defensive Additions* strategy although the performance implications of this strategy ranked third. Apparently, many

firms launch penetration low-priced additions to existing lines in competitive markets for defensive reasons despite frequently disappointing results.

Thus, three generic launch strategies were derived that differed in terms of performance. These launch strategies are descriptions of discernible sets of related launch decisions that managers repeatedly make. They show a consistency across managers in the way in which new products are launched. The use of the three generic launch strategies differed between main served market (consumer or industrial) and among countries of introduction. The *Technological Innovations* strategy was more common for industrial product introductions in the U.S.A. and The Netherlands, the *Offensive Improvements* strategy was more often used in the U.S.A. and the *Defensive Additions* strategy was more common in the U.K..

Differences in launch decisions and strategies between consumer and industrial products
Chapter Seven investigated whether consumer and industrial new products differed with regard to the launch decisions made and strategies followed. The average consumer product was an incremental improvement added to an existing line of products, branded with a brand name from another product in the product group, and launched by firms which described themselves as fast imitators, while the average industrial product was an innovative performance improvement, branded with the company name, and launched by firms which described themselves as technological innovators. Crosstabulating the strategic and tactical launch decisions with product type, consumer or industrial, showed that the launch decisions differed significantly in most cases (see Tables 7.2 and 7.3). Industrial products were more often innovative performance improvements targeted at a niche while using personal selling, direct marketing and public relations. In contrast, consumer products were more often market-driven incremental improvements targeted at a mass-market while using trade promotion, customer promotion, and print, tv, and radio advertising.

Industrial new products aimed at improving the performance of current products on the market where improvements of new consumer products were more often incremental. This finding was not surprising because industrial customers usually buy more rationally and use new products in further manufacturing processes so they may be more interested in performance improvements than in incremental improvements. Direct marketing was used for new industrial products to raise awareness among potential customers while the salesforce visited interested customers to explain the advantages of the improvements. For new consumer products, traditional broadcasting media and trade and customer promotion were used to obtain sufficient shelf space and to generate consumer awareness and interest.

Most launch differences between consumer and industrial new products were related to the number of potential customers. For example, Wilson (1996) argues that it is easier to

understand the true preferences and needs of industrial customers because industrial markets are usually characterized by having a small set of customers. Further, these customers are usually better able to verbalize their wishes and demands than final consumers. In addition, industrial customers are usually well-known by the firm which simplifies the identification of target people within the firm to talk about the nature of the problems that the customer tries to solve (Wilson, 1996). Firms launching consumer products in principle develop and introduce new products for a rather anonymous crowd. Although these firms may apply adequate statistical sampling methods to obtain insight into the needs, desires and wants of potential consumers, most consumers will remain incognito for the introducing firm.

The associations among the strategic and tactical launch decisions also differed for both product types. For both samples, market development characteristics were associated with tactical pricing and promotion decisions. These associations described how pricing and promotion tactics change over different stages of a market's development. However, a second set of related strategic and tactical launch decisions was derived for the consumer products. This dimension showed that launch timing and target market selection were associated with trade promotion, marketing expenditures and product tactics. More launch decisions were interrelated for the consumer products than for the industrial products suggesting that it may be more necessary to develop a consistent launch strategy for new consumer products than for new industrial products. An explanation for this difference is that some industrial products may have been uniquely developed for a single customer. For new consumer products, usually more diversity in consumer wishes and demands needs to be anticipated. Target market selection may not be an issue for the industrial products while launch timing may only refer to the delivery date requested by the customer. This line of reasoning suggests that the structure among strategic and tactical launch decisions is less obvious for highly unique, idiosyncratic products developed for a single customer than for products developed for many customers.

Another reason the results were different between both samples may be related to the newness of the products introduced. The industrial products were more often completely new, more innovative and partly based on technological possibilities. In contrast, consumer products were more often market-driven additions to existing lines launched in well-known markets. Completely new products require an informal organic NPD-management style, while projects that are aimed at improving the performance of existing products require a more formalized mechanistic managerial style (Abernathy and Utterback, 1988; Burns and Stalker, 1961). It is possible that organic management styles favor loosely structured launch decisions whereas mechanistic management styles structure launch decisions in-depth.

Hustad (1996) showed that companies use multifunctional teams more frequently for completely new products than for minor revisions (80% versus 40%). In this respect, Stryker

(1996) argues that many industrial companies transfer responsibility for the launch from the project team to the product management or marketing departments. It is possible that this transfer of responsibility limits the integration of strategic and tactical launch decisions. Therefore, Stryker (1996) argues that the importance of the launch to the success of the new product and the integration of the launch activities into the overall project supports the requirement that the project team maintains responsibility for the launch.

Further, consumer product companies usually launched similar or comparable products before (i.e., the products were often additions to existing lines) and had probably figured out by their own or others' experiences what worked and what did not work. This notion resembles the path-dependence and lock-in phenomena discussed by Ghemawat (1991). In addition, consumer products were usually market-driven suggesting that many launch decisions may have been dictated by the market. Thus, while the launch decisions for new consumer products may have been shaped by prior experiences, historical decisions or market expectations, companies launching industrial products probably possessed and used more freedom in their decision making.

Differences in launch decisions and strategies among countries of introduction
Crosstabulating the strategic and tactical launch decisions with the three countries showed that most launch decisions differed among countries of introduction (see Tables 8.2 and 8.3). Products introduced in the U.S.A. were more often technology-driven high-priced completely new products launched by technological innovators in early noncompetitive stages of the product life cycle for offensive reasons whereas the U.K. introductions were more often market-driven low-priced additions to existing lines launched by fast imitators in competitive later stages of the product life cycle for defensive reasons. The Dutch introductions were positioned between these two extremes but closer to the U.S.A. than to the U.K..

One reason launch decisions differed among countries may be related to differences in national culture. For example, Baba, Falkenburg and Hill (1996) discuss an American fascination with technological solutions, and a view of technology as a silver bullet that yields benefits automatically. In addition, Florida and Kenney (1990) state that "The U.S.A. has a remarkable capacity to make major new technological breakthroughs, but neglect the more mundane product and process innovations that are needed to improve new technology, use it effectively, turn it into products, and generate the world's prosperity and economic growth that comes from doing so." Economic conditions in the three countries at the time when the data were collected (May 1994-September 1995) may form another reason why launch decisions differed among countries. In general, companies spend more on R&D and are more active in searching for new markets with completely new products during periods of growth than during recessions. Table 9.1 provides a

comparison of two macroeconomic indicators provided by the *International Monetary Fund* (IMF) for the 1990-1995 period. During this period, growth in Gross Domestic Product (GDP) was lowest and inflation rate highest in the U.K.. These economic conditions may have resulted in more defensive product development and launch efforts in the U.K..
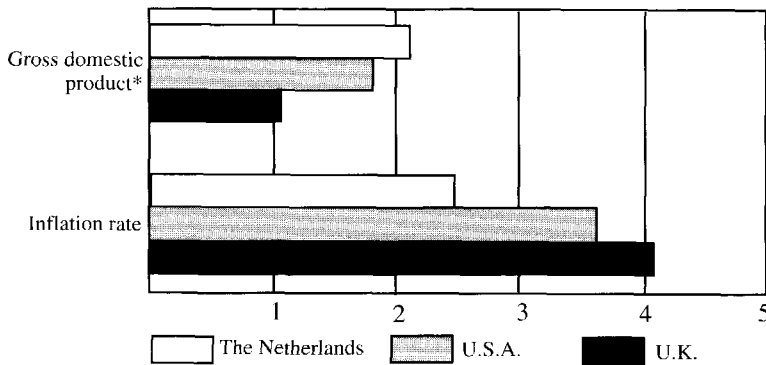
* Corrected for inflation

Source: International Monetary Fund (1996): *International Financial Statistics,* October.

Figure 9.1: Comparison of growth in GDP and inflation rate (average 1990-1995).

The structure between the sets of strategic and tactical launch decisions also differed among countries. While this structure was defined by four dimensions in the U.K. and two dimensions in The Netherlands, hardly any structure was found in the U.S. data. About 40% of the launch decisions were related in the Dutch sample, 63% in the U.K. sample and only 16% of the launch decisions were related in the U.S. sample. Although elements from all three strategic categories (i.e., product strategy, market strategy and firm strategy) were related in the three countries, largest differences among countries involved the launch tactics. In the U.S.A. only promotion tactics were interrelated, in The Netherlands pricing and promotion tactics, and in the U.K. all elements from the marketing mix.

Products introduced in the U.K. were more often imitative market-driven additions to an existing line launched in mature competitive markets. Consequently, several launch decisions may have been dictated by the market, prior experiences, or by competitors for the U.K. introductions. In contrast, U.S. introductions were more often technology-driven completely new products launched in emerging noncompetitive niches. Apparently, firms possess and use more freedom in their decision making for these types of new products than for reformulations.

Further, completely new products like the ones introduced in the U.S.A. require an informal organic NPD-management style, while reformulations require a more formalized mechanistic managerial style (see above). It is possible that organic management styles favor loosely structured launch decisions whereas mechanistic management styles structure launch decisions in-depth.

Another explanation why more launch decisions were related in the U.K. sample than in the U.S. sample may be related to the sample compositions. The percentage of industrial products was higher in the U.S. sample than in the U.K. sample (68% versus 47%). Chapter Seven showed that more launch decisions were interrelated for the consumer products than for the industrial products. The result that more launch decisions were related in the U.K. sample than in the U.S. sample is consistent with this view.

A final reason more launch decisions were related in the U.K. sample than in the U.S. sample may be related to differences in national culture. Baba, Falkenburg and Hill (1996) discussed that individualism and autonomy are key features of American culture. It is possible that product managers or marketing departments in the U.S.A. operated rather autonomously and made tactical launch decisions independent of strategic launch decisions already made. Especially when companies transfer responsibility for the launch from the project team to the product management or marketing departments, this transfer of responsibility may limit the integration of strategic and tactical launch decisions. The result that U.S. introductions were more often completely new, and that firms use project teams more often for completely new products than for reformulations (Hustad, 1996) agrees with these findings.

9.2   Measuring new product performance

A major problem in investigating the impact of strategic and tactical launch decisions on new product performance is the measurement of new product performance because it is a multi-dimensional concept. At the start of the present research project, it was a question which dimensions of performance one should include, how to measure these dimensions, and whether all firms should use the same new product performance measures. Therefore, Chapter Four focused on the definition and operationalization of new product performance.

First, the literature on measuring new product performance was reviewed. This literature suggested several dimensions of new product performance and indicators to measure these dimensions (Cooper, 1984; Cooper and Kleinschmidt, 1987b; Griffin and Page, 1993, 1996; Hart, 1993). Griffin and Page (1993, 1996) identified three project-level dimensions of new product performance: market acceptance, financial performance and product performance. These three dimensions were measured with 15 indicators of new product performance.

Subsequently, the design and results of an empirical study on the perceived importance of these 15 performance measures by managers in the Dutch industry was presented (see section 4.2). The results from that study showed that company and product characteristics such as type of market served, timing strategy, customer perceptions of firm's new products and driver of NPD do not impact the perceived importance of new product performance measures. These findings suggest that the same new product performance measures can be used for firms that differ in terms of background characteristics. In addition, the importance attached to the measures of new product performance depended on the time perspective taken. In the short term, the measures were associated with product performance, and in the long term with market acceptance and financial performance. These findings suggest that firms and academics should consider measuring different indicators of new product performance in the short term than in the long term.

Because different subsets of managers largely attached the same importance to the new product performance measures, the 15 performance indicators suggested by Griffin and Page (1993, 1996) were used to measure the performance of the product introductions in the present research. The ratings on these 15 performance measures were subjected to principal components analysis to assess the dimensions of new product performance. The three resulting factors were comparable to the Griffin and Page (1993) dimensions although seven of the 15 indicators loaded on more than one factor. Because a factor solution with doubly loading indicators has undesirable properties for further analyses, the three dimensional solution with the eight indicators was preferred over the solution with the 15 indicators suggested by Griffin and Page (1993). The purified solution suggested that market acceptance could be measured with three indicators (revenue growth, unit sales goals and revenue goals), financial performance with three indicators (IRR/ROI, break even time and margin goals) and product performance with two indicators (launched on time and speed to market). The purified solution was derived for the total sample and for each subsample which improved the generalizability of the derived structure. Therefore, the present research showed that there may not be 15 core project-level performance indicators (cf. Griffin and Page, 1993). Instead, only eight performance indicators may be sufficient to measure the independent dimensions of new product performance.

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If researchers are interested in the dimensions of new product performance, performance ratings are needed for a representative sample of new products whose performance is normally distributed across the performance continuum rather than for a set of products consisting of clear-cut successes and complete failures. Therefore, the principal components analyses were conducted on a partial correlation matrix controlling for the outcome status of the introduction: successful or unsuccessful. This procedure was chosen to derive dimensions of new product performance rather than dimensions of success or dimensions of failure. Previous research investigating dimensions of new product performance did not control for the outcome status of the new products (see, for instance, Cooper, 1984; Cooper and Kleinschmidt, 1987b). In addition, these studies included an overall success rating, irrespective of either the halo effect that it is likely to produce or the implications it may have for the interpretation of factors (Hart, 1996). Therefore, the dimensions derived by these authors most likely do not represent the dimensions of new product performance, but an average of the dimensions of new product success and the dimensions of new product failure depending on the distribution of successful and unsuccessful new products in the sample.

To conclude, several problems in measuring new product performance were solved by the present research project. Future researchers are recommended to control for the outcome status of the introductions and to focus on indicators that do not measure multiple dimensions simultaneously. Both suggestions will increase the validity and reliability of the new product performance dimensions. Although both solutions helped to arrive at a set of new product performance measures that can unequivocally be used in future research, some questions on measuring new product performance remain.

For example, it would be fruitful to investigate the correlations between subjective new product performance measures like the ones used in the present research project and more objective performance criteria. Dess and Robinson (1984) found that subjective performance measures can be applied for objective performance measures when measuring *company performance*. A replication study in the new product field may be appropriate before assuming that subjective new product performance measures correlate with objective performance criteria. In addition, future research may also aim to measure new product performance directly with objective performance ratings (for example, on the eight indicators suggested here). Although such a procedure requires considerable participation from companies and may impede comparing the performance across products and companies, it will improve the validity and reliability of the findings. Finally, Hart (1996) questions whether the new product performance dimensions are conceptually independent. She argues that principal components analysis derives statistically independent factors but that these dimensions may be logically related in time. Hart (1996) suggests that product performance may be related to market acceptance which may in turn be

related to financial performance. However, answering that question requires a longitudinal design and cannot be assessed from the present data.

9.3 Investigating launch strategies: Limitations and future directions

While the costs of launching a new product can equal or surpass the costs of developing a new product, little research has been done to study the relationships among launch decision options or between launch strategies and marketplace performance. The present research project synthesized the launch strategy literature to create a conceptual model by which the full complexities of new product launch decisions and strategies can be investigated.

The study empirically tested which launch decisions managers make, tested for relationships among launch decisions as predicted by the model with data obtained from consumer and industrial product firms in The Netherlands, the U.K. and the U.S.A., determined the ways in which managers build choices among launch decisions to create overall launch strategies and linked multiple new product performance measures to the strategies used. In addition, differences in launch decisions and strategies between successful and unsuccessful products, between consumer and industrial products, and among countries of introduction were investigated. Overall, the research helped better define the complexity and structure of new product launch decisions. However, as with all research, the methods employed have inherent limitations, which lead to opportunities to improve future research in this area.

For example, the sets of launch decisions making up a launch strategy encompass a large number of both strategic and tactical launch decisions. Because of the incomplete nature of previous specialist studies, an exploratory approach was used which purposely included many variables. Many launch decisions included showed links in the decision making process, demonstrating that launch decisions indeed are complex and multifaceted. However, even though it was endeavored to be as complete as possible in the variables included in the study, there may be additional variables which should be considered and added to future research. In particular, that most pricing, product and distribution tactics included in the study linked to the strategic decision choices already made raises the question of whether a complete enough set of variables within these categories has been included to completely capture these tactical launch decisions. In addition, some variables received more emphasis than others in the present study. For example, 10 marketing communications instruments and 11 commercialization objectives were measured. In contrast, pricing, product and distribution tactics were measured with only two variables. It may be possible that respondents need extensive response formats to adequately

describe certain decisions in the launch strategies they employed, and require simple formats to describe others.

A second limitation is that the present research is based on what managers reported they have done. Thus, the research is descriptive, providing insight into the complexity of launch decisions and how they relate to new product outcomes. While this is useful, it would be even more helpful if it was possible to tell managers and product developers what to do. Although the present research showed that some launch decisions and strategies were more successful than others, an obvious next step in future research which would provide additional managerial utility is to produce prescriptions of what managers should do to maximize the probability of commercial success, given a particular product development project.

In addition, future research should investigate the impact of company characteristics and firm competencies on new product launch decisions because several authors have suggested that the choice of launch decisions should depend on the firm's resource base. For example, Abell (1978) discussed that *strategic windows* for entry occurs when the best fit arises between a market's key success requirements and specific firm competencies. Robinson, Fornell and Sullivan (1992) showed that market pioneer skills and resources differed from later entrants' skills and resources. Oppedijk van Veen and Hultink (1996) showed that technological innovators tend to be large firms with high R&D and marketing budgets whereas fast imitators tend to be small firms with lower budgets for product and market development. Finally, Prahalad and Hamel (1989) argued that firms that are organized by core competencies should engage in more market pioneering because a core competency perspective broadens a firm's strategic horizon encouraging pioneering a new market. Therefore, investigating how different resource profiles are related to the strategic and tactical launch decisions that a firm makes would be another relevant direction for future research on launch strategies.

Finally, Green and Ryans (1990) argue that research on launch strategies is difficult because new product performance can only be determined months or years after launch, and then it is difficult to extract the effect of the launch strategy from the decisions taken after launch. Therefore, Gatignon, Weitz and Bansal (1990) suggest that the dynamics of the launch process are an interesting area for future research. For example, these dynamic models may include competitive behavior as new entries occur and would require a longitudinal approach. Such a prospective longitudinal approach would especially be appropriate to record events between the launch of a new product and the measurement of new product performance. Another advantage of such an approach would be that researchers do not have to rely on the perceptions of key respondents that might be subject to memory decay or attribution bias. However, although a longitudinal approach may be most appropriate from a methodological viewpoint, problems in datacollection and analysis are usually extensive (De Jonge and Oppedijk van Veen, 1983).

9.4 Implications for managers and product developers

This section consists of two parts. The first part discusses implications of the present study for managers. Then, implications for product developers will be discussed.

Implications for managers. Managers make strategic and tactical launch decisions for each new product developed. Before making these launch decisions, managers formulate expectations about the contributions of the various launch decisions to the future success of the new product. The present study provided insight into how launch decisions are related to new product performance. The first important implication of this study for managers is that launch decisions matter in attaining new product success. Crosstabulating the strategic and tactical launch decisions with new product outcome showed that 25 (out of 38) launch decisions differed significantly between the sets of successful and unsuccessful products. Therefore, launch decisions should not be made routinuously but after a formal deliberate decision making process.

The results for the strategic launch decisions showed that especially product and market strategy decisions differed between successful and unsuccessful products. Therefore, selecting which new products to develop and which markets to target are important strategic launch decisions. Firm strategy aspects did not happen to be large differentiators between successful and unsuccessful products although some objectives were associated with successful products. The results for the tactical launch decisions showed that all elements from the marketing mix (i.e., product tactics, distribution, pricing and promotion) differed between successful and unsuccessful products. Therefore, making proper tactical launch decisions on all 4 Ps of the marketing mix contributes to new product performance.

Some differences were found in the associations among launch decisions and new product success among subsamples. While the differences were relatively small between the samples of consumer and industrial products, differences among countries of introduction were relatively large. These findings have important implications for managers. For example, when a firm has developed a hybrid product (i.e., a product that is launched into consumer *and* industrial markets), some launch decisions may be successful in the consumer market and unsuccessful in the industrial market and vice versa. In addition, a new product that is launched in different countries may require different strategic and tactical launch decisions in different countries to be successful. These findings suggest that international marketing strategies for new products should be adapted for each separate country that is targeted.

Another important implication of the present research project for managers is that strategic launch decisions made early in the NPD process may hint at the most appropriate tactical launch decisions that should be implemented later, especially when reformulations are launched into mature established markets. Conversely, if a particular launch tactic has been decided upon (say

for historical reasons), then that launch tactic may suggest the more appropriate strategic launch decisions for the new product. For example, *Gateway Computer* only uses direct sales channels in the U.S.A.. Then, this firm should probably factor this tactical constraint into the strategic launch decisions made early in the process. In general, managers launching completely new products in emerging markets may use much freedom in their decision making. However, launch decision options may be limited when improvements are launched in mature established markets.

In addition, sets of related launch decisions contributed to new product performance suggesting that managers responsible for making tactical launch decisions should be aware of the strategic launch decisions already made. This would be rather easy when the responsibility for the strategic and tactical launch decisions rests within the same person (as often happens for reformulations or additions to existing lines). However, when different people are responsible for making either the strategic or the tactical launch decisions, procedures should be in place to secure that alignment will be achieved across strategic and tactical launch decisions. The recent and growing interest in developing new products within multifunctional teams may hinder this integration when the person who is responsible for the tactical launch decisions is not a member of the new product team. This is not to say that new products should not be developed within teams. Rather, it may be necessary to integrate the manager responsible for the tactical launch decisions in the new product team or to extend the responsibility of the team for the new product until it is firmly entrenched in the product life cycle.

Finally, the results in Chapter Four offered a guide to managers on how and when to measure the performance of new products. These measurement procedures are important to managers because it facilitates organizational learning and process improvements and fulfills the need within companies and new product teams for consensus on new product outcomes and determinants (Hultink and Robben, 1996). Managers should understand that new product performance is a multidimensional concept. The ultimate successful product is one that is successful on every dimension (i.e., market acceptance, financial performance and product performance). However, this is rare, so managers are frequently forced to make tradeoffs, sacrificing performance in one dimension to achieve it in another. To get a complete picture of a new product's performance, companies should regularly use two market acceptance measures and at least one measure from the other two groups (Griffin and Page, 1993). The present research showed that market acceptance can be measured with three indicators (revenue growth, unit sales goals and revenue goals), financial performance with three indicators (IRR/ROI, break even time and margin goals) and product performance with two indicators (launched on time and speed to market).

Finally, managers should recognize that some performance measures are more important to measure shortly after launch while others are more important to measure in the long term. The

findings reported in this study suggest that in the short term, the measures should be associated with product performance, and in the long term with market acceptance and financial performance. There were no differences in these findings for different subsets of managers showing that the results may be universal and apply to all firms even if they differ in background characteristics.

Directives for new product development processes. Product developers develop new products for or within companies to achieve the companies' financial and nonfinancial objectives. Several authors have proposed that the development of a new product and the development of a launch strategy are related dependent processes (see, for instance, Calantone and Montoya-Weiss, 1993; Roozenburg and Eekels, 1995). Insight in which launch decision options are available for introducing new products and which launch decisions impact new product performance will be beneficial for product developers for several reasons. For example, Roozenburg and Eekels (1995) argue that a product can only be designed if there is an idea of the new product's attributes and benefits, the number and characteristics of potential users, the available production capacity, and the proposed selling price and distribution channels.

Although the present research project mainly focused on the NPD process from a marketing viewpoint, the findings from this study will also be relevant for new product management. For example, Chapter Five showed that especially product and market strategy decisions differed between successful and unsuccessful products. The selection of the product/market combination usually is an important aspect of the *design specification plan* from which product developers depart. The present findings suggested that product developers should aim at developing new products that are relatively more innovative but not completely new. The challenge for a product developer in attaining new product success thus consists of designing a new product that is perceived as different from existing products but it should be avoided that the new product is perceived as completely new. This difference may refer to, for example, a higher quality, a higher reliability, or new relevant features. A low-price did not appear to be important for success because low-prices were more often associated with unsuccessful than with successful products. In Porter's (1980) terminology, differentiation strategies were more successful than low-cost strategies.

Mass-market strategies appeared to be risky because products that were developed for niche markets were more successful than products that were developed for the mass-market. Therefore, product developers are recommended to clearly and explicitly define the market segments for which they will develop the new product. An additional advantage of defining the target market explicitly is that it simplifies the identification of people to talk with concerning their needs, preferences and wishes.

Roozenburg and Eekels (1995) argue that product design is the process of devising and laying down the plans that are needed for the manufacturing of a new product. These plans are usually strategic in nature. Therefore, for product developers, the present findings on the strategic launch decisions may be more relevant than the tactical findings. However, the present research project also showed that several strategic launch decisions were related to several tactical launch decisions. Thus, strategic launch decisions such as the selection of product newness or target market selection that may partly be made by product developers may impact which tactical launch decisions should be implemented later.

An important implication of this finding for product developers who share responsibility for the strategic launch decisions for a new product is that they should be aware of the impact those decisions may have on the tactical launch decisions. Therefore, they should communicate clearly which strategic launch decisions were made to those who are responsible for the tactical launch. When new products are developed in multifunctional teams, it may be necessary to integrate the manager responsible for the tactical launch decisions in the new product team or to extend the responsibility of the team for the new product until it is firmly entrenched in the product life cycle. Because product developers are educated as generalists understanding both strategic and tactical aspects of NPD processes they are ideal candidates for supervising these multifunctional new product teams.

SUMMARY

Successful new products are important for companies' commercial health and survival (Cooper, 1979; Dougherty, 1990). Several authors have shown that new products account for increasing shares of total current companies' sales and profits (Booz, Allen and Hamilton, 1982; Hultink and Robben, 1995a). For example, Hultink and Robben (1995a) reported that new products introduced in the last five years generated 41% of company's sales and 39% of company's profits. However, many new products fail. In two reviews of the relevant literature on this topic, Crawford (1979, 1987) concludes that the failure rate for new products is in the area of 30% to 40%. Previous studies have shown that whether a new product becomes a success or failure in the market is partly determined by how well the launch is planned and executed (Cooper, 1979; Frambach, 1993). A new product can be unique, superior, and potentially loved by customers but fail due to a poor launch (Ottum, 1996).

Many examples in the business press have also illustrated that the development of a technologically advanced new product is no guarantee for commercial success. For example, the failures of PTT Telecom's Kermit (a mobile telephone unit) and Kodak's Photo-CD have been attributed to unsuccessful launch strategies (*Business Week,* February 3, 1995; *De Volkskrant,* January 14, 1994). Surprisingly, although many authors agree that the launch strategy is important, it is less well understood how specific launch decisions are related to new product performance. The present study aims to fill a part of this gap in current knowledge. The main research question has been organized into a set of single research questions, one per chapter. Below, the chapter summaries show the research question and the answers that the empirical results provided to that research question.

Chapter Two presents an extensive literature review that addresses theoretical and empirical contributions to the understanding of the effectiveness of launch strategies. Several shortcomings are present in the literature. For example, only a small set of launch decisions are included in these investigations or the multidimensional nature of new product performance has not been acknowledged. In addition, previous studies have not addressed differences between launch decisions for consumer and industrial products and among varying countries of introduction. Finally, only recently studies have started to investigate relationships among strategic and tactical launch decisions despite of the suggested relevance of developing internally consistent launch strategies.

Chapter Three presents the conceptual model and addresses the relationships among the building blocks in the model. In addition, the selection and operationalization of the launch variables is dealt with. A launch strategy is defined as consisting of those strategic and tactical marketing decisions that a firm makes to present a new product to its target market (adapted from

Green and Ryans, 1990). Strategic launch decisions refer to the project's product, market and firm strategies (for example, the objectives and targeting of the new product launch) whereas the tactical launch decisions represent the marketing mix decisions (product tactics, distribution, pricing and promotion). It is hypothesized that these two groups of decisions and the alignment achieved across both groups of decisions impact new product performance.

Chapter Four focuses on the definition and operationalization of the dependent variable (i.e., new product performance) in the study. The literature suggests several dimensions of new product performance and indicators to measure these dimensions. For example, Griffin and Page (1993, 1996) identify three project-level dimensions of new product performance (i.e., market acceptance, financial performance and product performance) that can be measured with 15 indicators. Subsequently, the design and results of an empirical study on the perceived importance of these 15 performance measures by managers in the Dutch industry is presented. The aim of this study is to investigate whether firms that differ in terms of background characteristics attach the same importance to the new product performance measures. The results show that company and product characteristics such as type of market served, timing strategy, customer perceptions of the firm's new products and driver of NPD do not impact the perceived importance of new product performance measures. These findings suggest that the same new product performance measures can be used for firms that differ in terms of background characteristics. In addition, the importance attached to the measures of new product performance depends on the time perspective taken. In the short term, the measures are associated with product performance, and in the long term with market acceptance and financial performance. These findings suggest that firms and academics should consider measuring different indicators of new product performance in the short term and in the long term.

Chapter Five investigates whether successful and unsuccessful new products differ with regard to the strategic and tactical launch decisions. First, the research method and targeted sample are discussed. Data are collected with a mail-questionnaire approach on 21 strategic launch decisions, 17 tactical launch decisions and 15 new product performance indicators for 1,022 new product introductions in The Netherlands, the U.K. and the U.S.A.. Subsequently, differences in strategic and tactical launch decisions between successful and unsuccessful products are tested through univariate analyses. The results show many significant differences. Therefore, launch decisions are related to new product success. The results suggest that firms should launch a broad assortment of innovative, swiftly developed improvements in moderately growing noncompetitive niches in the maturity stage of the product life cycle with high promotion expenditures and moderate distribution expenditures to enhance the probability of new product success. Comparing the findings across subsamples shows that the findings are

largely consistent between the consumer and industrial samples. However, several differences appear among countries.

Through multivariate analyses, Chapter Six analyzes the relationships between the sets of strategic and tactical launch decisions for the full sample. The results show that a majority of the strategic and tactical launch decisions are related across two dimensions. The first dimension describes how companies change their tactical launch decisions over different stages of the product life cycle, whereas the second dimension shows how companies attack or defend market positions by employing distribution and promotion tactics. The first dimension is consistent with how product life cycle theory postulates that marketing mix decisions should change over the product life cycle whereas the second dimension shows how firms defend current market positions with less innovative new products launched through current distributors and target new competitive markets with innovative new products through new distributors.

Cluster analyses provide insight into how groups of managers systematically use sets of related launch decisions. Three generic launch strategies are derived that differ in terms of performance. The *Offensive Improvements* strategy appears to be most successful although it is used for relatively few introductions. This strategy describes how improvements are launched into noncompetitive markets to put up competitive barriers. Tactical launch decisions associated with this strategy are broad assortments, high distribution expenditures, high prices and the use of current distribution channels, customer promotion and tv-advertising. The financial performance ratings of the *Technological Innovations* strategy (i.e., a strategy of launching technology-driven innovative high-priced new products in the introduction stage of the life cycle) are similar to the *Offensive Improvements* strategy, although overall this strategy ranks second in performance. Most introductions are launched with the *Defensive Additions* strategy although the performance implications of this strategy rank third. Apparently, many firms launch penetration low-priced additions to existing lines in competitive markets for defensive reasons despite frequently disappointing results.

Chapter Seven investigates whether consumer and industrial new products differ with regard to the launch decisions made and strategies followed. The results show that the launch decisions differ significantly in most cases. Industrial products are more often innovative performance improvements targeted at a niche market while using personal selling, direct marketing and public relations. In contrast, consumer products are more often market-driven incremental improvements targeted at a mass-market while using trade promotion, customer promotion, and print, tv, and radio advertising. The relationships among the strategic and tactical launch decisions also differ between both product types. For both samples, market development characteristics are associated with tactical pricing and promotion decisions. These associations describe how pricing and promotion tactics change over different stages of a market's

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development. A second set of related strategic and tactical launch decisions is derived for the consumer products showing that launch timing and target market selection are associated with trade promotion, marketing expenditures and product tactics. More launch decisions are related for the consumer products than for the industrial products suggesting that it is even more necessary to develop a consistent launch strategy for new consumer products than for new industrial products.

Chapter Eight investigates whether launch decisions and strategies differ among countries of introduction. The results show that most launch decisions differ among countries. Products introduced in the U.S.A. are more often technology-driven high-priced completely new products launched by technological innovators in early noncompetitive stages of the product life cycle for offensive reasons. In contrast, introductions in the U.K. are more often market-driven low-priced additions to existing lines launched by fast imitators in competitive later stages of the product life cycle for defensive reasons. The Dutch introductions are positioned between these two extremes but are closer to the U.S.A. than to the U.K.. The structure between the sets of strategic and tactical launch decisions also differs among countries. While this structure is defined by four dimensions in the U.K. and by two dimensions in The Netherlands, hardly any structure is found in the U.S. data. Although elements from all three strategic categories (i.e., product strategy, market strategy and firm strategy) are related in the three countries, the largest differences among countries involve the launch tactics. In the U.S.A. only promotion tactics are related, in The Netherlands pricing and promotion tactics, and in the U.K. all elements from the marketing mix

Chapter Nine summarizes the most important findings of this research. In addition, it addresses limitations of the study and identifies directions for future research. Finally, the academic and managerial implications and directives for new product development are discussed. For example, when measuring new product performance, future researchers and practitioners are recommended to control for the outcome status of the introductions and to focus on indicators that do not measure multiple dimensions simultaneously. In this respect, the present study shows that only eight indicators may be sufficient to measure the independent dimensions of new product performance. Another important implication of the present study is that strategic launch decisions made early in the NPD process determine the most appropriate tactical launch decisions that should be implemented later, especially when reformulations are launched into mature established markets. In addition, sets of related launch decisions contribute to new product performance suggesting that managers responsible for making the tactical launch decisions should be aware of the strategic launch decisions already made. When different people are responsible for making either the strategic or the tactical launch decisions, procedures should be in place to secure that alignment will be achieved across strategic and tactical launch decisions.

SAMENVATTING

Introductiestrategieën en het succes van een nieuw product

Succesvolle nieuwe producten vormen de levensader van vele bedrijven (Cooper, 1979; Dougherty, 1990). Verschillende onderzoekers hebben aangetoond dat nieuwe producten steeds meer bijdragen aan de totale omzet en winst van ondernemingen (Booz, Allen en Hamilton, 1982; Hultink en Robben, 1995a). Hultink en Robben (1995a) hebben bijvoorbeeld berekend dat producten die in de laatste vijf jaar zijn geïntroduceerd 41% van de omzet en 39% van de winst van een onderneming voor hun rekening nemen. Het belang van nieuwe producten is dus groot. Echter, vele nieuwe producten falen. Crawford (1979, 1987) stelt dat circa 30%-40% van de nieuwe producten niet aan de doelstellingen voldoen zoals die door het management worden geformuleerd. Het wekt dan ook geen verbazing dat er in de laatste dertig jaar vele studies zijn verricht naar de kritische succesfactoren van de productontwikkeling. Een belangrijke conclusie uit deze studies is dat de introductiestrategie een prominente rol speelt bij het succesvol introduceren van nieuwe producten (Cooper, 1979; Frambach, 1993). Een nieuw product kan uniek en superieur zijn maar desondanks falen door een ongeschikte marktintroductiestrategie.

Verschillende voorbeelden in de managementliteratuur laten ook zien dat de ontwikkeling van een technologisch geavanceerd product geen garantie biedt voor commercieel succes. Het falen van PTT Telecom's Kermit (een mobiele telefoon) en Kodak's Photo-CD wordt, bijvoorbeeld, toegeschreven aan ongeschikte introductiestrategieën (*Business Week*, 3 februari 1995; *De Volkskrant*, 14 januari 1994). Echter, ondanks het grote belang van de introductiestrategie voor het succes van een nieuw product is er relatief weinig bekend over de relaties tussen introductiebeslissingen en het succes van nieuwe producten. De huidige studie tracht een deel van deze leemte op te vullen. De basisonderzoeksvraag voor dit onderzoek, namelijk wat is de invloed van marktintroductiebeslissingen op het succes van een nieuw product, is uitgesplitst in een aantal deelvragen, één per hoofdstuk. De onderstaande samenvattingen van de verschillende hoofdstukken behandelen de specifieke deelvraag en de empirische resultaten.

In hoofdstuk twee wordt de literatuur over introductiestrategieën samengevat. Deze beschouwing van zowel theoretische als empirische studies toont aan dat er verschillende hiaten aanwezig zijn in de introductieliteratuur. Ten eerste blijkt dat de meeste studies onvoldoende introductiebeslissingen meenemen in het onderzoek. Daarenboven schenken weinig studies aandacht aan het multidimensionele karakter van succes. Verder wordt in dergelijke studies nauwelijks onderscheid gemaakt tussen introductiebeslissingen voor consumenten- en industriële producten, of die tussen landen. Ten slotte hebben onderzoekers pas recent aandacht besteed aan de relaties tussen de introductiebeslissingen onderling terwijl menig marketinghandboek

voorschrijft dat de verschillende marketinginstrumenten een consistent geheel dienen te vormen. Één van de bijdragen van de huidige studie is dat deze onderzoekt in welke mate ondernemingen zich aan deze voorschriften houden tijdens de introductie van nieuwe producten.

Hoofdstuk drie presenteert het conceptueel model dat centraal staat in het huidige onderzoek en behandelt de relaties tussen de verschillende groepen variabelen in het model. Verder worden in dit hoofdstuk de keuze en operationalisering van de introductievariabelen besproken. Een introductiestrategie wordt gedefinieerd als het geheel van strategische en tactische marketingbeslissingen die een onderneming neemt om een nieuw product in de markt te zetten (Green en Ryans, 1990). De strategische introductiebeslissingen refereren naar onderdelen van de product-, markt-, en ondernemingsstrategie (bijvoorbeeld, de introductiedoelstellingen, de marktkeuze en productnieuwheid), terwijl de tactische introductiebeslissingen de marketing-mix elementen representeren (product, distributie, prijs en reclame/promotie). Het conceptueel model veronderstelt dat beide groepen variabelen, en de relaties tussen de variabelen in beide groepen, het succes van een nieuw product beïnvloeden.

Hoofdstuk vier richt zich op het meten van het succes van een nieuw product. In de literatuur worden verschillende dimensies van succes onderscheiden. Griffin en Page (1993, 1996) stellen dat het succes van een nieuw product uit drie dimensies bestaat, namelijk productprestatie, marktacceptatie en financieel succes, die door middel van 15 indicatoren kunnen worden gemeten. Vervolgens wordt in dit hoofdstuk een studie beschreven waarin het belang dat Nederlandse managers aan deze 15 succesindicatoren hechten wordt onderzocht. Het doel van deze studie is te achterhalen of bedrijven met verschillende achtergrondkarakteristieken een verschillend belang toekennen aan de succesindicatoren. De resultaten van deze studie tonen aan dat bedrijfs- en productkarakteristieken, zoals bijvoorbeeld de innovatiestrategie of de drijfveer voor productontwikkeling, geen invloed uitoefenen op het gepercipieerde belang dat aan de succesindicatoren wordt gehecht. Deze bevindingen suggereren dat dezelfde succesindicatoren kunnen worden gebruikt voor ondernemingen met verschillende achtergrondkarakteristieken. De studie laat bovendien zien dat sommige succesindicatoren belangrijker worden geacht om het succes van een nieuw product op de korte termijn te meten terwijl andere indicatoren belangrijker zijn om het succes op de lange termijn te meten. Op de korte termijn ligt de nadruk op het meten van de productprestatie en de timing, terwijl op de lange termijn de investering in het nieuwe product zijn vruchten moet afwerpen. Het meten van marktaandeel, omzet en winstgevendheid is op de lange termijn essentieel. Deze bevindingen suggereren dat managers verschillende indicatoren in ogenschouw moeten nemen om het succes van een nieuw product op de korte, dan wel op de lange, termijn te meten.

In hoofdstuk vijf wordt onderzocht of strategische en tactische introductiebeslissingen verschillen tussen succesvolle en gefaalde nieuwe producten. Het hoofdstuk begint met een

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beschrijving van de onderzoeksmethode en de steekproef. Door middel van een vragenlijst worden gegevens verzameld in Nederland, de Verenigde Staten van Amerika (USA) en in het Verenigd Koninkrijk (UK) over 21 strategische introductiebeslissingen, 17 tactische introductiebeslissingen en 15 succesindicatoren voor 1022 introducties. De resultaten tonen aan dat veel introductiebeslissingen verschillen tussen de succesvolle en de gefaalde nieuwe producten. Deze resultaten impliceren dat introductiebeslissingen van invloed zijn op het succes van een nieuw product. Wanneer een onderneming de kans op succes van een nieuw product wil vergroten, dient het bedrijf een breed assortiment van innovatieve, snel ontwikkelde, verbeteringsinnovaties te lanceren in matig groeiende, niet concurrentiële niches in de volwassenheidsfase van de productlevenscyclus met hoge uitgaven aan reclame en promotie en gemiddelde uitgaven aan distributie. Deze resultaten worden zowel gevonden voor de consumenten- als voor de industriële producten. Echter, diverse verschillen komen naar voren tussen de landen waar de nieuwe producten worden geïntroduceerd.

Door middel van canonische correlatieanalyses worden in hoofdstuk zes de relaties onderzocht tussen de strategische en de tactische introductiebeslissingen voor alle onderzochte producten. De relaties tussen beide groepen introductiebeslissingen kunnen worden beschreven in termen van twee dimensies. De eerste dimensie beschrijft hoe bedrijven hun tactische introductiebeslissingen aanpassen aan de fase van de productlevenscyclus, terwijl de tweede dimensie laat zien hoe ondernemingen marktposities aanvallen en verdedigen door middel van promotie en distributietactieken. Vervolgens wordt door middel van clusteranalyses onderzocht of groepen van producten onderscheiden kunnen worden die op dezelfde wijze (met dezelfde gerelateerde introductiebeslissingen) zijn geïntroduceerd. Drie generieke introductiestrategieën worden geïdentificeerd die verschillen in de mate van succes. De *Aanvallende Verbeteraar* strategie blijkt het meest succesvol te zijn ondanks dat deze strategie voor relatief weinig introducties wordt gebruikt. Deze strategie beschrijft hoe verbeteringsinnovaties in niet-concurrentiële markten worden gelanceerd om entree-barrières op te richten. Tactische introductiebeslissingen die deel uit maken van deze generieke introductiestrategie zijn brede assortimenten, hoge distributieuitgaven, hoge prijzen en het gebruik van bestaande distributiekanalen, klantenpromotie en tv-reclame. Het financiële succes van de *Technologische Innovatie* strategie, een strategie waarbij relatief dure, compleet nieuwe producten in de introductiefase van de productlevencyclus worden geïntroduceerd, is vergelijkbaar met het financiële succes van de *Aanvallende Verbeteraar* strategie, maar in zijn geheel genomen eindigt deze strategie met betrekking tot succes als tweede. De meeste nieuwe producten worden gelanceerd met een *Verdedigende Toevoeging* strategie, alhoewel het succes van deze strategie beperkt is. Blijkbaar lanceren vele bedrijven goedkope lijnextensies in concurrentiële markten om defensieve redenen ondanks de vaak tegenvallende resultaten.

Uit hoofdstuk zeven blijkt dat veel introductiebeslissingen verschillen tussen consumenten- en industriële producten. Nieuwe industriële producten zijn vaak innovatieve verbeterings-innovaties die door middel van persoonlijke verkoop, direct-marketing en public relations in een niche markt worden gelanceerd, terwijl nieuwe consumentenproducten over het algemeen marktgedreven, incrementele verbeteringen zijn die met zowel klanten (onder andere, tv-, radio- en print reclame) als met detaillistenpromotie onder de aandacht van de potentiële klant worden gebracht. Ook de relaties tussen de strategische en tactische introductiebeslissingen verschillen tussen beide producttypes. In beide gevallen zijn prijs- en promotietactieken gerelateerd aan de ontwikkelingsfase van de markt. Echter, voor de consumentenproducten wordt ook een tweede dimensie gevonden die beschrijft hoe de timing van de introductie en de keuze van de doelmarkt samenhangt met distribuantenpromotie, marketinguitgaven en producttactieken. Meer introduc-tiebeslissingen hangen samen voor de consumentenproducten dan voor de de industriële pro-ducten. Deze resultaten impliceren dat het nog belangrijker is voor de consumentenproducten dan voor de industriële producten om een consistente introductiestrategie te formuleren.

De bevindingen in hoofdstuk acht tonen aan dat veel introductiebeslissingen verschillen naar gelang het land waar het nieuwe product wordt gelanceerd. Nieuwe producten in de USA zijn vaak technologisch gedreven, relatief hooggeprijsde, compleet nieuwe producten die door technologische innovatoren om offensieve redenen in de vroege, niet-concurrentiële fasen van de productlevenscyclus worden geïntroduceerd. Daarentegen zijn de introducties in de UK vaak relatief goedkope lijnextensies die door imitatoren om defensieve redenen in mature, concurrentiële markten worden gelanceerd. De Nederlandse introducties lijken meer op de productintroducties in de USA dan op de introducties in de UK. Ook de relaties tussen de stra-tegische en tactische introductiebeslissingen verschillen sterk tussen de landen. Deze structuur wordt in de UK beschreven door vier dimensies, in Nederland door twee dimensies, en in de USA door slechts één dimensie. De grootste verschillen in de gevonden structuren tussen de landen betreffen de introductietactieken. In de USA zijn enkel de promotietactieken gerelateerd aan de strategische introductiebeslissingen, in Nederland zowel de promotie- als de prijs-tactieken, en in de UK alle vier elementen van de marketing mix.

In hoofdstuk negen worden de belangrijkste resultaten van deze studie samengevat. Ook worden de tekortkomingen van het onderzoek en mogelijke oplossingen daarvoor bediscus-sieerd. Ten slotte worden de implicaties van dit onderzoek voor managers, onderzoekers en pro-ductontwikkelaars besproken. Bijvoorbeeld, wanneer onderzoekers of managers geïnteresseerd zijn in het meten van het resultaat van productintroducties wordt hen aanbevolen om geen indicatoren te kiezen die meerdere dimensies tegelijkertijd representeren. De huidige studie toont aan dat acht indicatoren voldoende zijn om de drie onafhankelijke dimensies van succes te meten. Een andere belangrijke implicatie van dit onderzoek is dat de strategische introduc-

tiebeslissingen die relatief vroeg in het productontwikkelingsproces worden genomen van invloed zijn op de tactieken die later aan de orde komen. Verder blijkt dat de relaties tussen de strategische en tactische introductiebeslissingen van invloed zijn op het succes van nieuwe producten. Daarom moeten diegenen die verantwoordelijk zijn voor de tactische introductiebeslissingen op de hoogte worden gebracht van de strategische beslissingen die reeds eerder zijn genomen. Wanneer verschillende personen verantwoordelijk zijn voor de strategische en tactische introductiebeslissingen, bijvoorbeeld verschillende leden van het multifunctionele ontwikkelingsteam, dienen procedures te worden ontworpen waarmee wordt veiliggesteld dat beide groepen beslissingen in overeenstemming met elkaar worden gebracht.

REFERENCES

Aaker, D.A. (1988). *Strategic market management.* New York, NY: John Wiley & Sons Inc.

Aaker, D.A. (1989). Managing assets and skills: The key to a sustainable competitive advantage. *California Management Review,* Winter, 91-106.

Aaker, D.A., Batra, R. and Myers, J.G. (1992). *Advertising management.* New York, NY: Prentice-Hall.

Abell, D.F. (1975). *Competitive marketing strategies.* Cambridge, MA: Marketing Science Institute (working paper).

Abell, D.F. (1978). Strategic windows. *Journal of Marketing,* 42, 21-26.

Abernathy, W. and Utterback, J. (1978). Patterns of industrial innovation. *Technology Review,* 41-47.

Abernathy, W. and Utterback, J. (1988). Patterns of industrial innovation. In: Tushman, M.J. and Moore, W.L. (eds.). *Readings in the management of innovation* (2nd edition). New York, NY: Harper Business, 25-36.

Ali, A. (1994). Pioneering versus incremental innovation: Review and research propositions. *Journal of Product Innovation Management,* 11, 46-61.

Alpert, F.H. and Kamins, M.A. (1995). An empirical investigation of consumer memory, attitude, and perceptions toward pioneer and follower brands. *Journal of Marketing,* 59 (October), 34-45.

Alpert, M.J. and Peterson, R.A. (1972). On the interpretation of canonical analysis. *Journal of Marketing Research,* 9, 187-192.

Ansoff, I.H. (1965). *Corporate strategy.* New York, NY: McGraw-Hill Inc.

Assmus, G. (1975). Newprod: The design and implementation of a new product model. *Journal of Marketing,* 39 (January), 16-23.

Assmus, G. (1984). New product forecasting. *Journal of Forecasting,* 3, 121-138.

Baba, M.L., Falkenburg, D.R. and Hill, D.H. (1996). Technology management and American culture: Implications for business process redesign. *Research Technology Management,* November-December, 44-54.

Babbie, E. (1992). *The practice of social research* (6th edition). Belmont, CA: Wadsworth Publishing Company.

Bain, J. (1956). *Barriers to new competition.* Cambridge, MA: Harvard University Press.

Baker, M.J. and Hart, S. (1989). *Marketing and competitive success.* Hemel Hempstead: Philip Allan.

Baker, M.J. and Hart, S. (1993). *Marketing, innovation and entrepeneurship: Time into market.* The Hague: International Conference on Engineering Design (ICED), August.

Bass, F.M. (1969). A new product growth model for consumer durables. *Management Science,* 15 (5) (January), 215-227.

Bass, F.M. and Bultez, A.V. (1982). A note on optimal strategic pricing of technological innovations. *Marketing Science,* 1 (4) (Fall), 371-378.

Batsell, R.R. and Wind, Y. (1980). Product testing: Current methods and needed developments. *Journal of the Market Research Society,* 22, 115-137.

Bayus, B.L. (1987). Forecasting sales of new contingent products: An application to the compact disc market. *Journal of Product Innovation Management,* 4, 243-255.

Bayus, B.L. (1992). The dynamic pricing of next generation consumer durables. *Marketing Science*, 11 (3) (Summer), 251-265.

Bayus, B.L. (1994). Optimal pricing and product development policies for new consumer durables. *International Journal of Research in Marketing*, 11, 249-259.

Bayus, B.L., Hong, S. and Labe, R.P., Jr. (1989). Developing and using forecasting models of consumer durables: The case of color television. *Journal of Product Innovation Management*, 6, 5-19.

Beard, C. and Easingwood, C. (1992). Sources of competitive advantage in the marketing of technology-intensive products and processes. *European Journal of Marketing*, 26 (12), 5-18.

Beard, C. and Easingwood, C. (1996). New product launch: Marketing action and launch tactics for high-technology products. *Industrial Marketing Management*, 25, 87-103.

Biggadike, E.R. (1979). *Corporate diversification: Entry, strategy, and performance*. Cambridge, MA: Harvard University Press.

Blattberg, R. and Golanty, J. (1978). Tracker: An early test market forecasting and diagnostic model for new product planning. *Journal of Marketing Research*, Vol. XV (May), 192-202.

Blattberg, R. and Hoch, S.J. (1990). Database models and managerial intuition: 50% model + 50% manager. *Management Science*, 36 (8), 887-899.

Booz, Allen & Hamilton. (1968). *Management of new products*. New York, NY: Booz, Allen & Hamilton Inc.

Booz, Allen & Hamilton. (1982) *New products management for the 1980s*. New York, NY: Booz, Allen & Hamilton Inc.

Bourgeois, L.J., III. (1980). Performance and consensus. *Strategic Management Journal*, 1, 227-248.

Bowman, D. and Gatignon, H. (1995). Determinants of competitor response time to a new product introduction. *Journal of Marketing Research*, Vol. XXXII (February), 42-53.

Bronnenberg, J.J.A.M. and Van Engelen, M.L. (1988). A Dutch test with the NewProd-model. *R&D Management*, 18 (4), 321-332.

Brown, R. (1992). Managing the 'S' curves of innovation. *Journal of Consumer Marketing*, 9 (1) (Winter), 61-72.

Brunner, A.G. and Carroll, S.J., Jr. (1969). The effect of prior notification on the refusal rate in fixed address surveys. *Journal of Advertising Research*, 9 (March), 42-44.

Buijs, J. and Valkenburg, R. (1996). *Integrale produktontwikkeling*. Utrecht: Lemma BV (in Dutch).

Burns, T. and Stalker, G.M. (1961). *The management of innovation*. New York, NY: Barnes and Noble.

Business Week (1995). *Kodak's new focus*, February 13, 40-46.

Buzzell, R.D. and Gale, B.T. (1987). *The PIMS principles: Linking strategy to performance*. New York, NY: The Free Press.

Calantone, R.J. and Cooper, R.G. (1979). A discriminant model for identifying scenarios of industrial new product failure. *Journal of the Academy of Marketing Science*, 7 (3), 163-183.

Calantone, R.J. and Montoya-Weiss, M.M. (1993). Product launch and follow-on. In: Souder, Wm.E. and Sherman, J.D. (eds.), *Managing new technology development*. New York, NY: McGraw-Hill Inc, 217-248.

Carpenter, G.S. (1987). Modeling competitive marketing strategies: The impact of marketing-mix relationships and industry structure. *Marketing Science*, 6 (2), 208-221.

Carpenter, G.S. and Nakamoto, K. (1989). Consumer preference formation and pioneering advantage. *Journal of Marketing Research*, Vol. XXVI (August), 285-298.

Carter, C.F. and Williams, B.R. (1957). *Industry and technical progress: Factors governing the speed of application of science.* London: Oxford University Press.

Cateora, P.R. (1996). *International marketing* (9th edition). Chicago, IL: Richard D. Irwin.

Chakravarti, D., Mitchell, A. and Staelin, R. (1981). Judgment based marketing decision models: Problems and possible solutions. *Journal of Marketing*, 45 (Fall), 13-23.

Chambers, J.C., Mullick, S.K. and Smith, D.D. (1971). How to choose the right forecasting technique. *Harvard Business Review*, July-August, 45-74.

Choffray, J.M. and Lilien, G.L. (1984). Strategies behind the successful industrial product launch. *Business Marketing*, November, 82-94.

Choffray, J.M. and Lilien, G.L. (1986). A decision-support system for evaluating sales prospects and launch strategies for new products. *Industrial Marketing Management*, 15, 75-85.

Clark, K. and Fujimoto, T. (1991). *Product development performance: Strategy, organization and management in the world auto industry.* Boston, MA: Harvard Business School Press.

Claycamp, H.J. and Liddy, L.E. (1969). Prediction of new product performance: An analytical approach. *Journal of Marketing Research*, Vol. VI (November), 414-420.

Craig, A. and Hart, S. (1992). Where to now in new product development research? *European Journal of Marketing*, 26 (11), 1-49.

Cooper, R.G. (1975). Why new industrial products fail. *Industrial Marketing Management*, 4, 315-326.

Cooper, R.G. (1979). The dimensions of industrial new product success and failure. *Journal of Marketing*, 43 (Summer), 93-103.

Cooper, R.G. (1980). Project NewProd: Factors in new product success. *European Journal of Marketing*, 14 (5/6), 277-291.

Cooper, R.G. (1982). New product success in industrial firms. *Industrial Marketing Management*, 11, 215-223.

Cooper, R.G. (1984). How new product strategies impact on performance. *Journal of Product Innovation Management*, 1, 5-18.

Cooper, R.G. (1985). Selecting winning new product projects: Using the NewProd system. *Journal of Product Innovation Management*, 2, 34-44.

Cooper, R.G. (1992). The NewProd system: The industry experience. *Journal of Product Innovation Management*, 9, 113-127.

Cooper, R.G. (1993). *Winning at new products: Accelerating the process from idea to launch.* Reading, MA: Addison-Wesley.

Cooper, R.G. (1996). New products: What separates winners from the losers. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development.* New York, NY: John Wiley & Sons Inc., 3-18.

Cooper, R.G. and Kleinschmidt, E.J. (1986). An investigation into the new product process: Steps, deficiencies, and impact. *Journal of Product Innovation Management*, 3, 71-85.

Cooper, R.G. and Kleinschmidt, E.J. (1987a). New products: What separates winners from losers? *Journal of Product Innovation Management*, 4, 169-184.

Cooper, R.G. and Kleinschmidt, E.J. (1987b). Success factors in product innovation. *Industrial Marketing Management*, 16, 215-223.

Cooper, R.G. and Kleinschmidt, E.J. (1988). Resource allocation in the new product process. *Industrial Marketing Management*, 17, 249-262.

Coskun Samli, A. and Wills, J. (1986). Strategies for marketing computers and related products. *Industrial Marketing Management*, 15, 23-32.

Cox, W.E., Jr. (1967). Product life cycles as marketing models. *Journal of Business*, 40 (4) (October), 375-384.

Crawford, C.M. (1977). Marketing research and the new product failure rate. *Journal of Marketing*, April, 51-61.

Crawford, C.M. (1979). New product failure rates: Facts and fallacies. *Research Management*, 9-13

Crawford, C.M. (1984). Protocol: New tool for product innovation. *Journal of Product Innovation Management*, 2, 85-91.

Crawford, C.M. (1987). New product failure rates: A reprise. *Research Management*, July/August, 20-24.

Crawford, C.M. (1994). *New product management* (4th edition). Homewood, IL: Richard D. Irwin.

Curren, M.T., Folkes, V.S. and Steckel, J.H. (1992). Explanations for successful and unsuccessful marketing decisions: The decision maker's perspective. *Journal of Marketing*, 56 (April), 18-31.

Day, G.S. (1981). The product life cycle: Analysis and applications issues. *Journal of Marketing*, 45 (Fall), 60-67.

Day, R.L. and Herbig, P.A. (1990). How the diffusion of industrial innovations is different from new retail products. *Industrial Marketing Management*, 19, 261-266.

Dean, J. (1950). Pricing policies for new products. *Harvard Business Review*, November, 45-53.

De Bedrijven CD (1994). Enschede: Generator BV, version 9403 (in Dutch).

De Bont, C.J.P.M. (1992). *Consumer evaluations of early product-concepts*. Delft: Delft University Press.

De Jonge, L. and Oppedijk van Veen, W.M. (1982). *The prospective buyer of consumer durables*. Groningen: Rijksuniversiteit Groningen.

De Jonge, L. and Oppedijk van Veen, W.M. (1983). Accounting for data inconsistencies in a longitudinal mail survey. *Journal of Economic Psychology*, 4, 377-400.

De Leeuw, A.C.J. (1990). *Bedrijfskundige methodologie: Management van onderzoek*. Assen: Van Gorcum & Comp (in Dutch).

De Volkskrant. (1994). *Marketingblunder PTT maakt eind aan Kermit*, 14 January (in Dutch).

Dess, G.G. and Robinson, R.B., Jr. (1984). Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5, 265-273.

Dijksterhuis, G.B. and Van Trijp, H.C.M. (1995). Positioneringsonderzoek op basis van (niet) metrische data: Overals in het marktonderzoek. *Jaarboek Nederlandse Vereniging van Marktonderzoekers*. Haarlem: Uitgeverij de Vrieseborch (in Dutch).

Dodson, J.A., Jr. and Muller, E. (1978). Models of new product diffusion through advertising and word-of-mouth. *Management Science*, 24 (15) (November), 1568-1578.

Dolan, R.J. and Jeuland, A.P. (1981). Experience curves and dynamic demand models: Implications for optimal pricing strategies. *Journal of Marketing*, 45 (Winter), 52-62.

Dougherty, D. (1990). Understanding new markets for new products. *Strategic Management Journal*, 11, 59-78.

Duerr, M.G. (1986). *The commercial development of new products*. New York, NY: Conference Board.

Dumaine, B. (1989). How managers can succeed through speed. *Fortune*, February 13, 54-59.

Dundas, G.R. and Krentler, K.A. (1982). Critical path method for introducing an industrial product, *Industrial Marketing Management*, 11, 125-131.

Dwyer, L. and Mellor, R. (1991). Organizational environment, new product process activities, and project outcomes. *Journal of Product Innovation Management*, 8, 39-48.

Dwyer, L. and Mellor, R. (1993). Product innovation strategies and performance of Australian firms. *Australian Journal of Management*, 18 (2), 159-180.

Easingwood, C.J. (1987). Early product life cycle forms for infrequently purchased major products. *International Journal of Research in Marketing*, 4, 3-9.

Easingwood, C.J. (1988). Product lifecycle patterns for new industrial products. *R&D Management*, 18 (1), 23-32.

Easingwood, C.J. (1989). An analogical approach to the long term forecasting of major new product sales. *International Journal of Forecasting*, 5, 69-82.

Easingwood, C.J. and Lunn, S.O. (1992). Diffusion paths in a high-tech environment: Clusters and commonalities. *R&D Management*, 22 (1), 69-80.

Edgett, S., Shipley, D. and Forbes, G. (1992). Japanese and British companies compared: Contributing factors to success and failure in NPD. *Journal of Product Innovation Management*, 9, 3-10.

Florida, R. and Kenney, M. (1990). *The breakthrough illusion*. Basic Books.

Fourt, L.A. and Woodlock, J.W. (1960). Early prediction fo market success for new grocery products. *Journal of Marketing*, October, 31-38.

Foxall, G.R. (1994). Consumer initiators: Adapters and innovators. *The British Journal of Management*, 5 (2), 3-12.

Frambach, R.T. (1993). *De adoptie en diffusie van innovaties in de industriële markt*. Tilburg: Katholieke Universiteit Brabant (in Dutch).

Frambach, R.T. (1995). Diffusion of innovations in business-to-business markets. In: Bruce, M. and Biemans, W.G. (eds.). *Product development: Meeting the challenge of the design-marketing interface*. Chichester: John Wiley & Sons Inc., 249-266.

Friedman, M. (1953). *Essays in positive economics*. Chicago, IL: University of Chicago Press.

Gatignon, H., Eliashberg, J. and Robertson, T.S. (1989). Modeling multinomial diffusion patterns: An efficient methodology. *Marketing Science*, 8 (3), 231-247.

Gatignon, H. and Robertson, T.S. (1989). Technology diffusion: An empirical test of competitive effects. *Journal of Marketing*, 53 (January), 35-49.

Gatignon, H., Weitz, B. and Bansal, P. (1990). Brand introduction strategies and competitive environments. *Journal of Marketing Research*, Vol. XXVII (November), 390-401.

Ghemawat, P. (1991). *Commitment: The dynamics of strategy*. New York, NY: The Free Press.

Golden, B.R. (1992). The past is the past - or is it? The use of retrospective accounts as indicators of past strategy. *Academy of Management Journal*, 35 (4), 848-860.

Golder, P.N. and Tellis, G.J. (1993). Pioneer advantage: Marketing logic or marketing legend? *Journal of Marketing Research*, Vol. XXX (May), 158-170.

Goldman, A. (1982). Short product life cycles: Implications for the marketing activities of small high-technology companies. *R&D Management*, 12 (2), 81-89.

Gould, J.P. (1970). Diffusion processes and optimal advertising policy. In: Phelps, E. et al. (eds.). *Microeconomic foundations of employment and inflation theory*. New York, NY: Norton, 338-368.

Green, D.H., Barclay, D.W. and Ryans, A.B. (1995). Entry strategy and long-term performance: Conceptualization and empirical examination. *Journal of Marketing*, 59 (October), 1-16.

Green, D.H. and Ryans, A.B. (1990). Entry strategies and market performance: Causal modeling of a business simulation. *Journal of Product Innovation Management*, 7, 45-58.

Green, P.E., Carroll, J.D. and Goldberg, S.M. (1981). A general approach to product design optimization via conjoint analysis. *Journal of Marketing*, 45 (Summer), 17-37.

Green, P.E. and Srinivasan, V. (1978). Conjoint analysis in consumer research: Issues and outlook. *Journal of Consumer Research*, 5, 103-123.

Green, P.E. and Wind, Y. (1975). A new way to measure consumer's judgement. *Harvard Business Review*, 53 (July-August), 107-117.

Greenley, G.E. and Bayus, B.L. (1994). A comparative study of product launch and elimination decisions in UK and US companies. *European Journal of Marketing*, 29 (2), 5-29.

Griffin, A. (1989). *Functionally integrating new product development*. Unpublished Ph.D. thesis. Boston, MA: Massachusetts Institute of Technology.

Griffin, A. (1993). Metrics for measuring product development cycle time. *Journal of Product Innovation Management*, 10, 112-125.

Griffin, A. (1997). The effect of project and process characteristics on product development cycle time. *Journal of Marketing Research*, (forthcoming).

Griffin, A. and Page, A.L. (1993). An interim report on measuring product development success and failure. *Journal of Product Innovation Management*, 10, 291-308.

Griffin, A. and Page, A.L. (1996). PDMA success measurement project: Recommended measures for product development success and failure. *Journal of Product Innovation Management*, 13, 478-496.

Gupta, A.K., Brockhoff, K. and Weisenfeld, U. (1992). Making trade-offs in the new product development process: A German/US Comparison. *Journal of Product Innovation Management*, 9, 11-18.

Haberman, S.J. (1973). The analysis of residuals in cross-classified tables. *Biometrica*, 29, 205-220.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995). *Multivariate data analysis with readings* (3rd edition). New York, NY: MacMillan Publishing Company.

Hart, S. (1993). Dimensions of success in new product development: An exploratory investigation. *Journal of Marketing Management*, 9, 23-41.

Hart, S. (1996). New product success: Measurement, methodology, models and myths. In: Thoelke, J.M., Loosschilder, G. and Smulders, F. (eds.). *Hidden versus open rules in product development*. Delft: Delft University of Technology, 169-186.

Hart, S. and Craig, A. (1993). Dimensions of success in new-product development. In: Baker, M.J. (ed.). *Perspectives on Marketing Management*, Vol. 3, 207-243.

Hayes, R.H. and Abernathy, W.J. (1980). Managing our way to economic decline. *Harvard Business Review*, 58 (4), 67-77.

Heeler, R.M. and Hustad, T.P. (1980). Problems in predicting new product growth for consumer durables. *Management Science*, 26 (10) (October), 1007-1020.

Heil, O.P. and Walters, R.G. (1993). Explaining competitive reactions to new products: An empirical signaling study. *Journal of Product Innovation Management*, 10, 53-65.

Hisrich, R.D. and Peters, M.P. (1991). *Marketing decisions for new and mature products*. New York, NY: Macmillan Publishing Company.

Hitt, M.A. and Ireland, R.D. (1985). Corporate distinctive competence, strategy, industry and performance. *Strategic Management Journal*, 6, 273-293.

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage Publications.

Hofstede, G. (1983). National cultures in four dimensions: A research-based theory of cultural differences among nations. *International Studies of Management and Organization*, Vol. XII (1/2), 46-74.

Hofstede, G. (1992). Cultural dimensions in people management: The socialization perspective. In: Pucik, V. and Tichy, M.N. (eds.). *Globalizing management: Creating and leading the competitive organization*. New York, NY: John Wiley & Sons Inc., 139-158.

Hofstede, G. and Bond, M.H. (1984). Hofstede's culture dimensions: An independent validation using Rokeach's value study, *Journal of Cross-Cultural Psychology*, 15 (4), 417-433.

Hofstede, G. and Bond, M.H. (1988). The Confucius connection: From cultural roots to economic growth, *Organizational dynamics*, 16 (4).

Hopkins, D.S. and Bailey, E.L. (1971). New product pressures. *The Conference Board Record*, 8 (June), 16-24.

Horsky, D. and Simon, L.S. (1983). Advertising and the diffusion of new products. *Marketing Science*, 2 (1) (Winter), 1-17.

Hruschka, H. (1986). Market definition and segmentation using fuzzy clustering methods. *International Journal of Research in Marketing*, 3, 117-134.

Hultink, E.J., Griffin, A., Hart, S. and Robben, H.S.J. (1997). Industrial new product launch strategies and product development performance. *Journal of Product Innovation Management*, forthcoming.

Hultink, E.J., Griffin, A., Robben, H.S.J. and Hart, S. (1996). In search of generic launch strategies. In: Norrgren, F., Karlsson, C., De Meyer, A. and Utterback, J. (Eds.). *Proceedings of the 3rd EIASM International Product Development Conference*, Fontainebleau: INSEAD, 381-395.

Hultink, E.J. and Hart, S. (1996). The world's path to the better mousetrap: Myth or reality? In: Berács, J., Bauer, A. and Simons, J. (eds.). *Marketing for an expanding Europe*. Budapest: Budapest School of Economics, 597-622.

Hultink, E.J. and Robben, H.S.J. (1995a). Measuring new product success: The difference that time perspective makes. *Journal of Product Innovation Management*, 12, 392-405.

Hultink, E.J. and Robben, H.S.J. (1995b). Successful launch strategies: New and future research efforts. In: Bruce, M. and Biemans, W.G. (eds.). *Product development: Meeting the challenge of the design-marketing interface*. Chichester: John Wiley & Sons Ltd., 231-244.

Hultink, E.J. and Robben, H.S.J. (1996). Measuring product development success and failure: A framework defining success and failure. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development*. New York, NY: John Wiley & Sons Inc., 455-461.

Hultink, E.J. and Schoormans, J.P.L. (1995). How to launch a high-tech product successfully: An analysis of marketing managers' strategy choices. *The Journal of High Technology Management Research*, 6 (2) (Fall), 229-242.

Hultink, E.J. and Thoelke, J.M. (1995). Wat komt er op het schap en waarom? Een empirisch onderzoek onder distribuanten van duurzame consumentengoederen. *Bedrijfskunde*, 67 (4), 53-61 (in Dutch).

Hultink, E.J. and Y. Wong (1993). *De introduktie van Nintendo's Gameboy op de Nederlandse markt*. Delft: Delft University of Technology (working paper).

Hurter, A.P. and Rubenstein, A.H. (1978). Market penetration by new innovations: The technological literature. *Technological Forecasting and Social Change*, 11, 197-221.

Hustad, T.P. (1996). Reviewing current practices in innovation management and a summary of selected best practices. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development*. New York, NY: John Wiley & Sons Inc., 489-511.

International Monetary Fund. (1996). *International Financial Statistics*, October.

Jain, D.C. and Rao, R.C. (1989). Effect of price on the demand for durables: Modeling, estimation, and findings. *Journal of Business and Economic Statistics*, 8, 163-170.

Jamieson, L.F. and Bass, F.M. (1989). Adjusting stated intention measures to predict trial purchase of new products: A comparison of models and methods. *Journal of Marketing Research*, Vol. XXVI (August), 336-345.

Jobber, D. (1995). *Principles and practice of marketing*. Maidenhead: McGraw-Hill Inc.

Johne, F.A. and Snelson, P.A. (1988). Success factors in product innovation: A selective review of the literature. *Journal of Product Innovation Management*, 5, 114-128.

Jones, J.M. and Ritz, C.J. (1987). *Incorporating distribution into new product diffusion models*. Chapel Hill, NC: University of North Carolina (working paper).

Kalish, S. (1983). Monopolist pricing with dynamic demand and production cost. *Marketing Science*, 2 (2) (Spring), 135-159.

Kalish, S. (1985). A new product adoption model with price, advertising, and uncertainty. *Management Science*, 31 (12) (December), 1569-1585.

Kalish, S. and Lilien, G.L. (1986). A market entry timing model for new technologies. *Management Science*, 32 (2) (February), 194-205.

Kalish, S. and Sen, S.K. (1986). Diffusion models and the marketing mix for single products. In: Mahajan, V. and Wind, Y. (eds). *Innovation diffusion models of new product acceptance*. Cambridge, MA: Ballinger Publishing Company, 87-116.

Kamakura, W.A. and Balasubramanian, S.K. (1988). Long-term view of the diffusion of durables. *International Journal of Research in Marketing*, 5, 1-13.

Kanuk, L. and Berenson, C. (1975). Mail surveys and response rates: A literature review. *Journal of Marketing Research*, 12 (November), 440-453.

Keegan, W.J. (1989). *Global marketing management* (4th edition). Englewood Cliffs, NJ: Prentice-Hall.

Kerin, R.A., Varadarajan, P.R. and Peterson, R.A. (1992). First-mover advantage: A synthesis, conceptual framework, and research propositions. *Journal of Marketing*, 56 (October), 33-52.

Klecka, W.R. (1980). *Discriminant analysis*. Newbury Park, CA: Sage Publications, Inc.

Kleinschmidt, E.J. and Cooper, R.G. (1991). The impact of product innovativeness on performance. *Journal of Product Innovation Management*, 8, 240-251.

Kotler, P. (1965). Competitive strategies for new product marketing over the life cycle. *Management Science*, 12 (4) (December), 104-119.

Kotler, P. (1994). *Marketing management: Analysis, planning, implementation, and control* (8th edition). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kotler, P., Armstrong, G., Saunders, J. and Wong, V. (1996). *Principles of marketing (The European edition)*. London: Prentice-Hall Inc.

Kuylen, A.A.A. and Verhallen, T.M.M. (1981). The use of canonical analysis. *Journal of Economic Psychology*, 1 (3) (September), 217-237.

Lambkin, M. (1988). Order of entry and performance in new markets. *Strategic Management Journal*, 9, 127-140.

Lambkin, M. (1992). Pioneering new markets: A comparison of market share winners and losers. *International Journal of Research in Marketing*. 9 (1) (March), 5-22.

Leonard-Barton, D. (1993). Experts as negative opinion leaders in the diffusion of a technological innovation. *Journal of Consumer Research*, 11 (March), 914-926.

Levitt, T. (1965). Exploit the product life cycle. *Harvard Business Review*, November-December, 81-94.

Lilien, G.L., Kotler, P. and Moorthy, K.S. (1992). *Marketing models*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Lilien, G.L., Rao, A.G. and Kalish, S. (1981). Bayesian estimation and control of detailing effort in a repeat-purchase diffusion environment. *Management Science,* 27 (May), 493-506.

Lilien, G.L. and Yoon, E. (1989). Determinants of new industrial product performance: A strategic reexamination of the empirical literature. *IEEE Transactions on Engineering Management*, Vol. 36 (1) (February), 3-10.

Lilien, G.L. and Yoon, E. (1990). The timing of competitive market entry: An exploratory study of new industrial products. *Management Science*, 36 (5) (May), 568-585.

Link, P.L. (1987). Keys to new product success and failure. *Industrial Marketing Management*, 16, 109-118.

Lucas, Jr., G.H. and Bush, A.J. (1984). Guidelines for marketing a new industrial product. *Industrial Marketing Management*, 13, 157-161.

Little, J.D.C. (1975). Brandaid: A marketing-mix model, Part 2: Implementation, calibration, and case study. *Operations Research*, 23 (4), 654-673.

Magaziner, I.C. and Patinkin, M. (1988). Fast heat: How Korea won the microwave war. *Harvard Business Review*, 35-44.

Mahajan, J. (1992). The overconfidence effect in marketing management predictions. *Journal of Marketing Research*, Vol. XXIX (August), 329-342.

Mahajan, V. and Muller, E. (1979). Innovation diffusion and new product growth models in marketing. *Journal of Marketing*, 43 (Fall), 55-68.

Mahajan, V., Muller, E. and Bass, F.M. (1990). New product diffusion models in marketing: A review and directions for research. *Journal of Marketing*, 54 (January), 1-26.

Mahajan, V., Muller, E. and Kerin, R.A. (1984). Introduction strategy for new products with positive and negative word-of-mouth. *Management Science*, 30 (12) (December), 1389-1404.

Mahajan, V. and Peterson, R.A. (1978). Innovation diffusion in a dynamic potential adopter population. *Management Science*, 24 (15) (November), 1589-1597.

Mahajan, V. and Peterson, R.A. (1985). *Models for innovation diffusion*. Beverley Hills, CA: Sage Publications.

Mahajan, V. and Wind, Y. (1986). *Innovation diffusion models of new product acceptance.* Cambridge, MA: Ballinger Publishing company.

Mahajan, V. and Wind, Y. (1988). New product forecasting models: Directions for research and implementation. *International Journal of Forecasting*, 4, 341-358.

Mahajan, V. and Wind, Y. (1992). New product models: Practice, shortcomings and desired improvements. *Journal of Product Innovation Management*, 9, 128-139.

Maidique, M.A. and Zirger, B.J. (1984). A study of success and failure in product innovation: The case of the U.S. electronics industry. *IEEE Transactions on Engineering Management*, Vol. EM-31 (4) (November), 192-203.

Mansfield, E. (1961). Technical change and the rate of imitation. *Econometrica*, 29 (4) (October), 741-765.

Mansfield, E., Schwartz, M. and Wagner, S. (1981). Imitation costs and patents: An empirical study. *The Economics Journal*, December, 907-918.

Massy, W.F. (1969). Forecasting the demand for new convenience products. *Journal of Marketing Research*, Vol. VI (November), 405-412.

Moenaert, R.K. (1991). *The communication interface between R&D and marketing during technological product innovation projects.* Gent: The University of Gent.

Moenaert, R.K. and Souder, W.E. (1990). An information transfer model for integrating marketing and R&D personnel in new product development projects. *Journal of Product Innovation Management*, 7 (2), 91-107.

Montgomery, D.B. (1975). New product distribution: An analysis of supermarket buying behavior. *Journal of Marketing Research*, 12, 255-264.

Montoya-Weiss, M.M. and Calantone, R.G. (1994). Determinants of new product performance: A review and a meta-analysis. *Journal of Product Innovation Management*, 11 (5), 397-417.

Moore, W.L. and Pessemier, E.A. (1993). *Product planning and management: Designing an delivering value*. New York, NY: McGraw-Hill, Inc.

Moriarty, R.T. and Kosnik, T.J. (1989). High-tech marketing: Concepts, continuity and change. *Sloan Management Review,* Summer, 7-17.

Morrison, D.G. (1969). On the interpretation of discriminant analysis. *Journal of Marketing Research,* Vol. VI, 156-163.

Myers, S. and Marquis, D.G. (1969). Successful industrial innovations. *National Science Foundation,* NSF, 69-17.

Naert, P. and Leeflang, P. (1988). *Building implementable marketing models.* Leiden: Martinus Nijhoff.

Narasimhan, C. and Sen, S.K. (1983). New product models for test market data. *Journal of Marketing,* 47 (Winter), 11-24.

Norton, J.A. and Bass, F.M. (1987). A diffusion theory model of adoption and substitution for successive generations of high-technology products. *Management Science,* 33 (9) (September), 1069-1086.

Nunnally, J.C. (1978). *Psychometric theory* (2nd edition). New York, NY: McGraw-Hill Inc.

Olleros, F. (1986). Emerging industries and the burnout of pioneers. *Journal of Product Innovation Management,* 1, 5-18.

Olson, E.M., Walker, O.C., Jr. and Ruckert, R.W. (1995). Organizing for effective new product development: The moderating role of product innovativeness. *Journal of Marketing,* 59 (January), 48-62.

Onkvisit, S. and Shaw, J.J. (1986). Competition and product management: Can the product life cycle help? *Business Horizons,* July-August, 51-62.

Oppedijk van Veen, W.M. and Hultink, E.J. (1996). Product- en marktontwikkelingsinspanningen van de Nederlandse industrie. *Produkt,* 6, 10-13 (in Dutch).

Oppedijk van Veen, W.M. and Verhallen, T.M.M. (1986). Vacation market segmentation: A domain-specific value approach. *Annals of Tourism Research,* 13, 37-58.

Ottum, B.D. (1996). Launching a new consumer product. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development.* New York, NY: John Wiley & Sons Inc., 381-393.

Page, A.L. (1993). Assessing new product development practices and performance: Establishing crucial norms. *Journal of Product Innovation Management,* 10, 273-290.

Page, A.L. and Rosenbaum, H.F. (1987). Redesigning product lines with conjoint analysis: How Sunbeam does it. *Journal of Product Innovation Management,* 4, 120-137.

Pearce, J.A., Robbins, D.K. and Robinson, R.B., Jr. (1987). The impact of grand strategy and planning formality on financial performance. *Strategic Management Journal,* 8, 125-134.

Peelen, E., Commandeur, H.R., Hultink, E.J. and Van Pelt, R. (1996). *Multimedia in de marketingstrategie.* Bunnik: F&G Publishing (in Dutch).

Peters, T.J. and Waterman, R.H. (1982). *In search of excellence: Lessons from America's best-run companies.* New York, NY: Harper & Row Inc.

Porter, M.E. (1980). *Competitive strategy: Techniques for analyzing industries and competitors.* New York, NY: The Free Press.

Prahalad, C.K. and Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review,* May-June, 79-91.

Pringle, L.G., Wilson, R.D. and Brody, E.I. (1982). News: A decision-oriented model for new product analysis and forecasting. *Marketing Science*, 1 (1) (Winter), 1-29.

Punj, G. and Stewart, D.W. (1983). Cluster analysis in marketing research: Review and suggestions for application. *Journal of Marketing Research*, Vol. XX (May), 134-148.

Riezebos, R. and Waarts, E. (1994). *Power play*. Groningen: Wolters-Noordhoff.

Robben, H.S.J. (1991). *A behavioral simulation and documented behavior approach to income tax evasion*. Deventer: Kluwer.

Roberts, R.W. and Burke, J.E. (1974). Six new products: What made them successful. *Research Management*, 16 (May), 21-24.

Robertson, T.S. and Gatignon, H. (1986). Competitive effects on technology diffusion. *Journal of Marketing*, 50 (July), 1-12.

Robinson, B. and Lakhani, C. (1975). Dynamic price models for new-product planning. *Management Science*, 21 (10) (June), 1113-1122.

Robinson, W.T. (1988). Marketing mix reactions to entry. *Marketing Science*, 7 (4), 368-385.

Robinson, W.T. and Fornell, C. (1985). Sources of market pioneer advantages in consumer goods industries. *Journal of Marketing Research*, Vol. XXII (August), 305-317.

Robinson, W.T., Fornell, C. and Sullivan, M. (1992). Are market pioneers intrinsically stronger than later entrants? *Strategic Management Journal*, 13, 609-624.

Rogers, E.M. (1983). *Diffusion of innovations* (3rd edition), New York, NY: The Free Press.

Rogers, E.M. and Shoemaker, F.F. (1971). *Communication of innovations: A cross-cultural approach*. New York, NY: The Free Press.

Rokeach (1968). *Beliefs, attitudes and values*. San Francisco, CA: Jossey-Bass.

Rokeach (1973). *The nature of human values*. New York, NY: The Free Press.

Roozenburg, N.F.M. and Eekels, J. (1995). *Product design: Fundamentals and methods*. Chichester: John Wiley & Sons Inc.

Rosenau, M.D. (1990). *Faster new product development: Getting the right products to market quickly*. New York, NY: AMACOM.

Rothwell, R. (1972). Factors for success in industrial innovations. *Projects SAPPHO: A comparative study of success and failure in industrial innovation*. SPRU. Brighton, Sussex: University of Sussex.

Rothwell, R. (1976). The Hungarian SAPPHO: Some comments and comparison. *Research Policy*, 3, 30-38.

Rothwell, R., Freeman, C., Horsley, A., Jervis, V., Roberson, A. and Townsend, J. (1974). SAPPHO updated - Project SAPPHO phase II. *Research Policy*, 3, 258-291.

Ryans, A.B. (1988). Strategic market entry factors and market share achievement in Japan. *Journal of International Business Studies*, Fall, 389-409.

Sarin, S. and Kapur, G.M. (1990). Lessons from new product failures: Five case studies. *Industrial Marketing Management*, 19, 301-313.

Schelbergen, F.J.C.M. (1980). *Kanonische korrelatie analyse ten behoeve van marktsegmenterings-onderzoek*. Tilburg: IVA, Instituut voor Sociaal-Wetenschappelijk Onderzoek (in Dutch).

Schoormans, J.P.L., Ortt, R.J. and Bont, C. de (1995). Enhancing concept test validity by using expert consumers. *Journal of Product Innovation Management*, 12 (2), 153-162.

Schnaars, S.P. (1986). When entering growth markets: Are pioneers better than poachers? *Business Horizons,* March-April, 27-36.

Schnaars, S.P. (1994). *Managing imitation strategies: How later entrants seize markets from pioneers.* New York, NY: The Free Press.

Scott, J.E. and Keiser, S.K. (1984). Forecasting acceptance of new industrial products with judgment modeling. *Journal of Marketing,* 48 (Spring), 54-67.

Shocker, A.D. and Hall, W.G. (1986). Pretest market models: A critical evaluation. *Journal of Product Innovation Management,* 3, 86-107.

Shocker, A.D. and Srivivasan, V. (1979). Multiattribute approaches for product concept evaluation and generation: A critical review. *Journal of Marketing Research,* Vol. XVI (May), 159-180.

Siegel, S. and Castellan, N.J., Jr. (1988). *Nonparametric statistics for the behavioral sciences* (2nd edition). New York, NY: McGraw-Hill Inc.

Silk, A.J. and Urban, G.L. (1978). Pre-test-market evaluation of new packaged goods: A model and measurement methodology. *Journal of Marketing Research,* Vol. XV (May), 171-191.

Simon, H. and Sebastian, K. (1987). Diffusion and advertising: The German telephone campaign. *Management Science,* 33 (4) (April), 451-466.

Sinha, R.K. and Chandrashekaran, M. (1992). A split hazard model for analyzing the diffusion of innovations. *Journal of Marketing Research,* 29 (February), 116-127.

Sinha, R.K. and Lilien, G.L. (1992). *Modeling purchase tresholds for industrial products.* Institute for the Study of Busines Markets Report 10, University Park, PA: Penn State University.

Smith, P.G. and Reinersten, D.G. (1991). *Developing products in half the time.* New York, NY: Van Nostram Reinhold.

Song, X.M. and Parry, M.E. (1994). The dimensions of industrial new product success and failure in the People's Republic of China. *Journal of Product Innovation Management,* 11, 105-112.

SPSS Categories. (1990). Chicago, IL: SPSS Inc.

SPSS Statistics. (1990). Chicago, IL: SPSS Inc.

Stokmans, M.J.W. (1991). *The relative importance of product attributes: Consumer decision theories in new-product development.* Delft: Delft University Press.

Stigler, G. (1981). The economics of information. *Journal of Political Economy,* 69, 213-225.

Stone, M. (1985). Strategies for marketing new computer products. *Long Range Planning,* 18 (3), 41-54.

Stryker, J.D. (1996). Launching a new business-to-business product. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development.* New York, NY: John Wiley & Sons Inc., 363-380.

Sultan, F., Farley, J.U. and Lehmann, D.R. (1990). A meta-analysis of applications of diffusion models. *Journal of Marketing Research,* Vol. XXVII (February), 70-77.

Swan, J.E. and Rink, D.R. (1982). Fitting market strategy to varying prduct life cycles. *Business Horizons,* January-February, 72-76.

Szymanski, D.M., Troy, L.C. and Bharadwaj, S.G. (1995). Order of entry and business performance: An empirical synthesis and reexamination. *Journal of Marketing,* 59 (October), 17-33.

Tabachnick, B.G. and Fidell, L.S. (1983). *Using multivariate statistics.* New York, NY: Harper & Row Inc.

Thölke, J.M. (1996). Philips electrical kettles. In: Atkinson, J. and Wilson, I. *Strategic marketing: Cases, concepts & challenges*. London: HarperCollins, 232-245.

Thomas, R.J. (1985). Estimating market growth for new products: An analogical diffusion model approach. *Journal of Product Innovation Management*, 2, 45-55.

Thorelli, H.B. and Burnett, S.C. (1991). The nature of prduct life cycles for industrial goods businessess. *Journal of Marketing*, 45 (Fall), 97-108.

Tornatzky, L.G. and Klein, K.J. (1982). Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. *IEEE Transactions on Engineering Management*, Vol. EM-29 (1) (February), 28-45.

Traynor, K. and Traynor, S.C. (1989). Marketing approaches used by high tech firms. *Industrial Marketing Management*, 18, 281-287.

Tull, D.S. and Hawkins, D.I. (1987). *Marketing research: Measurement and method* (4th edition). New York, NY: Macmillan Publishing Company.

Urban, G.L. (1970). SPRINTER Mod III: A model for the analysis of new frequently purchased consumer products. *Operations Research*, 18 (September/October), 805-853.

Urban, G.L. (1975). Perceptor: A model for product positioning. *Management Science*, 21 (8) (April), 858-871.

Urban, G.L., Carter, T., Gaskin, S. and Mucha, Z. (1986). Market share rewards to pioneering brands: An empirical analysis and strategic implications. *Management Science*, 32 (6) (June), 645-659.

Urban, G.L. and Hauser, J.R. (1993). *Design and marketing of new products* (2nd edition). Englewood Cliffs, NJ: Prentice-Hall.

Urban, G.L., Hauser, J.R. and Roberts, J.H. (1990). Prelaunch forecasting of new automobiles: Models and implementation. *Management Science*, 36 (April), 401-421.

Urban, G.L., Hulland, J.S. and Weinberg, B.D. (1993). Premarket forecasting for new consumer durable goods: Modeling categorization, elimination, and consideration phenomena. *Journal of Marketing*, 57 (April), 47-63.

Urban, G.L. and Katz, G.M. (1983). Pre-test-market models: Validation and managerial implications. *Journal of Marketing Research*, Vol. XX (August), 221-234.

Urban, G.L., Weinberg, B.D. and Hauser, J.R. (1996). Premarket forecasting of really-new products. *Journal of Marketing*, 60 (January), 47-60.

Usunier, J.C. (1993). *International marketing: A cultural approach*. Englewood Cliffs, NJ: Prentice Hall, Inc.

Utterback, J.M., Allen, T.J., Hollomon, H.J. and Sirbu, M.A., Jr. (1976). The process of innovation in five industries in Europe and Japan. *IEEE Transactions on Engineering Management*, Vol. EM-23, 1 (February), 3-9.

Van de Ven, A.H. (1986). Central problems in the management of innovation. *Management Science*, 32 (5) (May), 590-607.

Vanden Abeele, P. and I. Christiaens (1986). Strategies of Belgian high-tech firms. *Industrial Marketing Management*, 15, 299-308.

Van Drunen, M.C.H. (1996). *Business marketing: Strategische en operationele concepten*. Schoonhoven: Academic Service (in Dutch).

Van Everdingen, Y.M. (1995). *Adoption and diffusion of the European currency unit: An empirical study among European companies*. Amsterdam: Free University Amsterdam.

Venkatraman, N. and Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *Academy of Management Review*, 11 (4), 801-814.

Verschuren, P.J.M. (1988). *De probleemstelling voor een onderzoek* (2e verbeterde druk). Utrecht: Het Spectrum (in Dutch).

Vink, N.J. (1986). *Macht en cultuur in marketing: Een studie over responsiviteit bij besluitvorming van ondernemingen in de jaren 1965-1980*. Delft: Delft University Press (in Dutch).

Webster, F.E., Jr. (1991). *Industrial marketing strategy* (3rd edition). New York, NY: John Wiley & Sons, Inc.

Wedel, M. (1990). *Clusterwise regression and market segmentation: Developments and applications*. Wageningen: Agricultural University.

Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.

Wilson, E. (1996). Market analysis and segmentation issues for new business-to-business products. In: Rosenau, M.D., Jr., Griffin, A., Castellion, G. and Anschuetz, N. (eds.). *The PDMA handbook of new product development*. New York, NY: John Wiley & Sons Inc., 51-61.

Wilton, P.C. and Pessemier, E.A. (1981). Forecasting the ultimate acceptance of an innovation: The effects of information. *Journal of Consumer Research*, 8 (September), 162-171.

Wind, Y. (1973). A new procedure for concept evaluation. *Journal of Marketing*, 37 (October), 2-11.

Wind, Y. (1982). *Product policy: Concepts, method and strategy*. Reading, MA: Addison-Wesley.

Wind, Y., Douglas, S.P. and Perlmutter, H.V. (1973). Guidelines for developing international marketing strategy. *Journal of Marketing*, April, 14-23.

Wind, Y. and Mahajan, V. (1987). Marketing hype: A new perspective for new product research and introduction. *Journal of Product Innovation Management*, 4, 43-49.

Wind, Y., Mahajan, V. and Bayless, J.L. (1990). *The role of new product models in supporting and improving the new product development process: Some preliminary results*. Cambridge, MA: Marketing Science Institute.

Wittink, D.R. and Cattin, P.L. (1989). Commercial use of conjoint analysis: An update. *Journal of Marketing*, 53, 91-96.

Wittink, D.R. and Montgomery, D.B. (1979). Predictive validity of trade-off analysis for alternative segmentation schemes.

Womack, J.P., Jones, D.T. and Roos, D. (1990). *The machine that changed the world: The story of lean production*. New York, NY: Macmillan Publishing Company.

Woodside, A.G. (1995). Pricing an industrial technological innovation: A case study. *Industrial Marketing Management*, 24, 145-150.

Yoon, E. and Lilien, G.L. (1985). New industrial product performance: The effects of market characteristics and strategy. *Journal of Product Innovation Management*, 3, 134-144.

Yu, J. and Cooper, H. (1983). A quantitative review of research design effects on response rates to questionnaires. *Journal of Marketing Research*, 20 (February), 36-44.

Zirger, B.J. and Maidique, M.A. (1990). A model of new product development: An empirical test. *Management Science*, 36 (7), 867-883.

APPENDICES

Appendix 5A: The U.S. *IntroStrat* © questionnaire

ISBM

Institute for the Study of Business Markets

IntroStrat©

An investigation into the introduction strategies of new products

WELCOME to IntroStrat !

Dear ISBM Participant:

We are investigating **product introduction strategies for new products.** This investigation is an international joint research project undertaken by academics from the Netherlands, Scotland and America. The ISBM is supporting this research because we believe that member companies will benefit from the results.

The Objective of IntroStrat: The number of new products developed and marketed each year is increasing. For each new product launched, an introduction strategy is formulated. The objectives of this research are to determine what introduction strategies are used by firms and to relate improved marketplace success probabilities to specific aspects of the launch strategies. We anticipate that the results from this research will help firms to make better new product launch decisions. Preliminary results from this study will be available at the ISBM Member's Meeting in May.

Filling out the questionnaire will take about *20 minutes*. The data you supply will be incorporated anonymously and will be used only for this research. A business reply envelope is enclosed to return the completed survey to the ISBM.

If you have any further questions on filling out the questionnaire, you can contact Professor Abbie Griffin at (312) 702-3657 or Drs. E.J. Hultink at +31-15-783032 in the Netherlands. Thank you for your cooperation.

Professor A.J. Griffin
Drs. E.J. Hultink

University of Chicago
Graduate School of Business

Telephone: (312) 702-3657
Fax: (312) 702-0458
Email: FAC_AJG@gsbvax.uchicago.edu

IntroStrat Directions

Please choose both a *successful* and an *unsuccessful* product or product line for the introduction of which you were at least partly responsible. Both product introductions should have taken place after 1988.

We first ask you to provide information about your company. This provides us with the means to analyze differences across the types of companies that have participated in our research.

For both the successful and unsuccessful products, you then indicate what price, promotion, branding, distribution, and product assortment strategies your company followed. *If you choose to respond about only a successful or an unsuccessful new product, answer questions 28-47 for that product only.* We encourage you to respond for both a successful as well as an unsuccessful product.

Please answer all questions. If you do not know an answer precisely, please indicate your estimate of the most appropriate response. We would rather you provide us a somewhat imprecise estimate to leaving the question blank.

PART 1: BACKGROUND INFORMATION

Questions 1 through 21 request information about your company or strategic business unit. Please indicate *for each question* which of the several alternatives best reflects your situation. The answer may not reflect your situation perfectly, but please choose the alternative which comes closest.

1)   In which functional area do you primarily work (please *circle* only one alternative) ?

        1   - Marketing
        2   - R&D/Development
        3   - Financial
        4   - General Management

2)   A strategic business unit (SBU) is a corporate group with its own strategy, budget and profit
        responsibility. Is your company divided into strategic business units ?

        1   - Yes   go to question 3
        2   - No   go to question 10

3)   Which of the following market types best describes your SBU's primary market? (please *circle* only
        one alternative)

        1   - Consumer market
        2   - Industrial market
        3   - Government

4)   Which of the following categories best describes your SBU's primary source of revenue? (please *circle* only one alternative)

1   - Consumer Durables
2   - Consumer Package Goods
3   - Transport/Storage and Communication
4   - Chemicals
5   - Financial Services
6   - Other Services
7   - Construction and Installation
8   - Other, namely_____

5)   What percentage of your SBU's *sales* comes from products introduced in the last five years ? *Circle the percentage* that comes closest to your percentage.

0   10   20   30   40   50   60   70   80   90   100%

6)   What percentage of your SBU's *profit* comes from products introduced in the last five years? *Circle the percentage* that comes closest to your percentage.

0   10   20   30   40   50   60   70   80   90   100%

7)   In general, how do you think customers perceive the new products developed by your SBU, *compared to competing products* (please *circle* only one alternative) ?

1   Incremental performance improvements with no new product uses
2   Performance improvements which open new usage possibilities
3   Products never seen or used by customers before

8)   With respect to the way your strategic business unit develops new products, your SBU can best be described as a : (please *circle* only one alternative)

1   Technological innovator
                (first on the market, first to develop and apply a new technology)
2   Fast imitator
                (fast follower, emphasize product improvements)
3   Cost reducer
                (enter when the pace of changes slows, emphasize standardization and efficiency)

9)   In *market-driven* product development, customer needs are the basis for all products or services developed. In *technology-driven* product development, new products derive mainly from the result of R&D capabilities. Which of the following categories best describes the primary driver of your SBU's new product development?
        (please *circle* only one alternative) ?

1   - Completely market driven
2   - Mainly market driven
3   - Mix of these two
4   - Mainly technologically driven
5   - Completely technologically driven

GO TO QUESTION 17

10) Which of the following best describes your company's primary market: (circle one alternative)

    1   - Consumer market
    2   - Industrial market
    3   - Government

11) Which of the following categories best describes your company's primary source of revenue? (please *circle* only one alternative)

    1   - Consumer Durables
    2   - Consumer Package Goods
    3   - Transport/Storage and Communication
    4   - Chemicals
    5   - Financial Services
    6   - Other Services
    7   - Construction and Installation
    8   - Other, namely_____

12) What percentage of your company's *sales* comes from products introduced in the last five years ? *Circle the percentage* that comes closest to your percentage.

    0   10   20   30   40   50   60   70   80   90   100%

13) What percentage of your company's *profit* comes from products introduced in the last five years? *Circle the percentage* that comes closest to your percentage.

    0   10   20   30   40   50   60   70   80   90   100%

14) In general, how do you think customers perceive the new products developed by your company, *compared to competing products* (please *circle* only one alternative) ?

    1   Incremental performance improvements with no new product uses
    2   Performance improvements which opens new usage possibilities
    3   Products never seen or used by customers before

15) Which phrase best describes the way your company develops new products? (*circle* one alternative)

    1   Technological innovator (first on the market, first to develop and apply a new technology)
    2   Fast imitator (fast follower, emphasize product improvements)
    3   Cost reducer (enter when the pace of changes slows, emphasize standardization and efficiency)

16) In *market-driven* product development, customer needs are the basis for all products or services developed. In *technology-driven* product development, new products derive mainly from the result of R&D capabilities. Which category best describes the primary driver of your company's new product development? (please *circle* only one alternative)

    1   - Completely market driven
    2   - Mainly market driven
    3   - Mix of these two
    4   - Mainly technologically driven
    5   - Completely technologically driven

17)   In what year was your company established:

In:_____

18)   What was your company's total sales in 1993 ?

$_____

19)   How many employees were on average employed in your company in 1993 ?

_____ Employees

20)   The headquarters of your company is situated in:

Europe	1
U.S.A.	2
Japan	3
Elsewhere, namely_____	4

21)   Does the company in which you are employed develop their own new products (please *circle* only one alternative) ?

Yes, our company develops their own new products	1
No, our company is a trading company	2
Otherwise, namely _____	3

THE NEXT PAGES CONTAIN THE QUESTIONS ON THE PRODUCT INTRODUCTIONS.

PART 2: INFORMATION ON PRODUCT INTRODUCTIONS

Please choose both *a successful and an unsuccessful* product for which you were at least partially responsible. Indicate, for each product, the price, promotion, branding, distribution and product assortment strategies that were followed by your company. Finally, tell us about the markets into which both new products were introduced.

22)   Have you helped launch *a successful new product* since 1988?

        - Yes   1   - continue
        - No   2   - go to question 25

23)   Please describe in detail the last *successful new product introduction* in which you participated.

_____

_____

_____

_____

24)   Please indicate *for this successful product* how well the following 16 criteria were met. A '1' means that the new product *did not meet* the criterion at all. A '7' means that the new product met the criterion *completely*. Please *circle* the number that best reflects your situation.

	Did not meet Criteria at all		Met Criteria Somewhat				Met Criteria Completely
- Met total revenue goals	1	2	3	4	5	6	7
- Attained profitability goals	1	2	3	4	5	6	7
- Launched on time	1	2	3	4	5	6	7
- Met revenue growth goals	1	2	3	4	5	6	7
- Met unit sales goals	1	2	3	4	5	6	7
- High level of customer acceptance	1	2	3	4	5	6	7
- High level of customer satisfaction	1	2	3	4	5	6	7
- Product performance level	1	2	3	4	5	6	7
- Speed-to-market	1	2	3	4	5	6	7
- Stayed within development budget	1	2	3	4	5	6	7
- Short break-even time	1	2	3	4	5	6	7
- Met ROI objectives	1	2	3	4	5	6	7
- Attain margin goals	1	2	3	4	5	6	7
- Met market share goals	1	2	3	4	5	6	7
- Met quality guidelines	1	2	3	4	5	6	7
- Sufficient sales of new product as a percentage of total company sales	1	2	3	4	5	6	7

25)   Have you helped launch *an unsuccessful new product* since 1988?

        - Yes   1   - continue
        - No   2   - go to question 28

26) Please describe in detail the last *unsuccessful new product introduction* in which you participated.

_____

_____

_____

_____

27) Please indicate *for this unsuccessful product* how well the following 16 criteria were met. A '1' means that the new product *did not meet* the criterion at all. A '7' means that the new product met the criterion *completely*. Please *circle* the number that best reflects your situation.

	Did not meet Criteria at all		Met Criteria Somewhat				Met Criteria Completely
- Met total revenue goals	1	2	3	4	5	6	7
- Attained profitability goals	1	2	3	4	5	6	7
- Launched on time	1	2	3	4	5	6	7
- Met revenue growth goals	1	2	3	4	5	6	7
- Met unit sales goals	1	2	3	4	5	6	7
- High level of customer acceptance	1	2	3	4	5	6	7
- High level of customer satisfaction	1	2	3	4	5	6	7
- High product performance level	1	2	3	4	5	6	7
- Speed-to-market	1	2	3	4	5	6	7
- Stayed within development budget	1	2	3	4	5	6	7
- Short break-even time	1	2	3	4	5	6	7
- Met ROI objectives	1	2	3	4	5	6	7
- Attain margin goals	1	2	3	4	5	6	7
- Met market share goals	1	2	3	4	5	6	7
- Met quality guidelines	1	2	3	4	5	6	7
- Sales of new product as a percentage of total company sales sufficient	1	2	3	4	5	6	7

In questions 28 through 47, please indicate the price, promotion, branding, distribution, and product assortment strategies your company followed for both the successful and the unsuccessful product. We also ask questions about the markets in which both new products were introduced. *If you can respond only for a successful or an unsuccessful new product, answer questions 28-47 for this product alone.* We prefer however that you answer for both a successful and an unsuccessful product.

28) Please indicate the *category* into which each product best fits (please *circle* only one answer for each column).

	Successful product	Unsuccessful product
- Completely new product, new market	1	1
- New product line	2	2
- Addition to existing line	3	3
- Improvement of existing product	4	4
- Repositioning of existing product	5	5
- Existing product produced at lower cost	6	6

29) Please indicate *how much time elapsed* between the idea for the new product (project initiation) and the new product launch for each product (please *circle* only one answer for each column).

	Successful product	Unsuccessful product
- Less than six months	1	1
- Within six months and a year	2	2
- Within one and three years	3	3
- More than three years	4	4

30) With what *objective(s)* was each product introduced? (*circle* more than one answer if needed)

	Successful product	Unsuccessful product
- Expand the product range	1	1
- Put up barriers for competition	2	2
- Increase market penetration	3	3
- Utilize excess capacity	4	4
- Produce products at lower cost	5	5
- Capitalize on a new technology	6	6
- Establish a foothold in a new market	7	7
- Capitalize on existing markets	8	8
- Offset seasonal cycle	9	9
- Increase image of the company	10	10
- Preempt emerging market segment	11	11

31) Please indicate what *pricing strategy* your company followed for each product. A *skimming pricing strategy* sets relatively high initial prices and then lowers price over time. A *penetration pricing strategy* uses relatively low prices as the principal instrument for quickly penetrating a large part of the potential market. (please *circle* only one answer for each column)

	Successful product	Unsuccessful product
- Skimming strategy	1	1
- Penetration strategy	2	2
- Other, namely_____	3	3

32) Please indicate the *average price* of each product at introduction, relative to the price of *comparable* competing products already on the market (*circle* one answer for each column):

	Successful product	Unsuccessful product
- Higher price level than competitors	1	1
- Equal price level	2	2
- Lower price level than competitors	3	3

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33) What percentage of the *promotion budget* was spent on *customer promotion* (pull promotion), and on trade promotion (push)?   The total of push- and pull-promotion should add up to 100%.

	Successful product	Unsuccessful product
- Customer aimed promotion	____ %	____ %
- Trade aimed promotion	____ %	____ %
	100%	100%

34) Please indicate all *marketing communication instruments* used in introducing the successful as well as the unsuccessful products (*circling* more than one answer for each column is possible).

	Successful product	Unsuccessful product
- Trade promotion	1	1
- Consumer promotion	2	2
- Salesforce promotion	3	3
- Direct Marketing	4	4
- TV-advertisement	5	5
- Radio-advertisement	6	6
- Print-advertisement	7	7
- Personal selling	8	8
- Public Relations (PR)	9	9
- Other, namely _____	10	10

35) Please indicate the *branding strategy* followed for each product (*circle* one answer per column).

	Successful Product	Unsuccessful product
- Developed a new brand name	1	1
- Adopted brand name from other product group	2	2
- Emphasized company name	3	3
- No Brand/Generic	4	4

36) Please indicate whether *the range of products* your company launched was broader, equally broad or less broad than the product range of your immediate competitors (*circle* one answer per column).

	Successful product	Unsuccessful product
- Broader range of products than competitors	1	1
- Equally broad range of products	2	2
- Smaller range of products than competitors	3	3

37) Please indicate whether your company used *current distribution channels for your company, new distribution channels* or a *combination of both* (please *circle* only one answer for each column) ?

	Successful product	Unsuccessful product
- Used current distribution channels	1	1
- Developed new distribution channels	2	2
- Combination of both new and current	3	3

38) Please indicate your company's *relative distribution expenditures* for these products in the first year after introduction, compared to competitors (please *circle* only one answer for each column).

	Successful product	Unsuccessful product
- Spent more on distribution expenditures	1	1
- About the same	2	2
- Spent less on distribution expenditures	3	3

39) Please indicate your company's relative *promotion expenditures* for these products in the first year after introduction compared to competitors (please *circle* only one answer for each column).

	Successful product	Unsuccessful product
- Spent more on promotion expenditures	1	1
- About the same	2	2
- Spent less on promotion expenditures	3	3

40) Please indicate the strategy your company followed. A *niche* strategy targets *one specific* customer segment with a product developed just for them. A *selective* strategy targets *several distinct* segments with the same product and different marketing mixes. An *undifferentiated* strategy targets the whole market with the same product and marketing mix (*circle* one per column).

	Successful product	Unsuccessful product
- Niche strategy	1	1
- Selective strategy	2	2
- Undifferentiated strategy	3	3

41) Please indicate *the number of companies* (excluding your own company) already offering similar competing products when your new product was introduced (*circle* only one answer per column).

	Successful product	Unsuccessful product
- Not one company, we were the first	1	1
- 1-3 companies on the market	2	2
- More than 4 companies on the market	3	3

42) Please indicate how customers perceived *the relative innovativeness* of each product, *compared to competing products* (*circle* only one answer per column).

	Successful Product	Unsuccessful product
- More innovative than competing products	1	1
- Equally innovative	2	2
- Less innovative than competing products	3	3

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43) Please indicate which *stage of the product life cycle* the product category was in when your company introduced each new product. (*circle* only one answer per column)

	Successful product	Unsuccessful product
- Introduction stage	1	1
- Growth stage	2	2
- Maturity stage	3	3
- Decline stage	4	4

44) Please indicate *the growth rate of the total market* in which your company introduced each new product (*circle* one answer per column).

	Successful product	Unsuccessful product
- Less than 0 % (negative growth)	1	1
- 0 % - 5 %	2	2
- 6 % - 10 %	3	3
- More than 10 % .	4	4

45) Please indicate the *market saturation level* for each new product at introduction. The *market saturation level* is defined as the percentage of the potential customers for a product who already own one or more product(s) in the product category.

	Successful product	Unsuccessful product
Market Saturation Level	_____ %	_____ %

46) Please indicate the *market penetration level* for each new product introduction. *Market penetration* is defined as the average number of products from the appropriate category per customer (*100%).

	Successful product	Unsuccessful product
Market Penetration Level	_____ %	_____ %

47) Please indicate what marketing mix changes the competition made in reaction to each of your company's new product introductions (*circling* more than one answer for each column is possible).

	Successful product	Unsuccessful product
- Price modifications	1	1
- Distribution channel modifications	2	2
- Promotion modifications	3	3
- Modifications in product assortment	4	4
- Competitors did not react	5	5

PART 3:   YOUR COMMENTS

Thank you for the attention you have given this research. Results if this study will be available through Penn State's Institute for the Study of Business Markets. As a member of the ISBM, results will be available to you in a working paper months in advance of journal publication.

You can help us by providing comments on the questionnaire or the research in the space below. Or, phone us with your comments.

PART 4:   RETURNING THE QUESTIONNAIRE

When completed, return the questionnaire to the ISBM in the enclosed business reply envelope. If it is missing, please mail to:
                        ISBM,
                        402 Bus Admin Bldg
                        University Park, PA   16802-3004.
                        Phone: (814) 863-2782
                        Fax: (814) 863-0413

Appendix 5B: Selection of companies that launched new products in The Netherlands

ABC Hekwerk
AEG Nederland
Ahrend
Amstrad
Anamet Europe
Arro Electronics
Asea Brown Boveri
Attema
Bammens
Batavus
Berkel
Blessing Electronics
Boer bv
Bols
Brossard
Bull
Campina Melkunie
Citroën
Coca Cola Nederland
Daalderop Professionals
DAF Trucks
De Jong Coen
De Jong Gorredijk
De Waard Tenten
Degens
Delft Instruments
DIS Drankenindustrie
DMN Machinefabriek
Econosto Nederland
Eldutronic
Electromach
Eniac
Ergon Electric
Ericsson Radio Systems
ESD Electronics
ETI Precision
Eyssen
Fasson
Ferro Plastics
Flair Plastics
Gazelle
Giant
Groupe Schneider
Haceka Accessoires
Haust

Hewlett Packard
HK-Plastics
ICS International
Intermeco
Jumbo International
Kiekens
Kodak Nederland
Koninklijke Brink Molyn
Lalesse
Lankhorst
Lega Industrie
Leica
LTF Transporttechniek
3M
Machinefabriek Jansen & Heuning
Menken Diary Foods
NedCar
Nicaf-Smitt
Nintendo
Océ-Nederland
Philips Consumer Electronics
Philips DAP
Poeth
Poppers Systems
Priva
Rank Xerox
Samsung
Sharp Electronics
Siemens Nixdorf
Sigma Coatings
Signaal USFA
Sony Nederland
Stadtman
Still Intern Transport
Stork
Sun Electric Europe
Technics
Tennant
Translift Nederland
Twentse Kabelfabriek
Unisys
Vaillant
Van Berkel
Vrumona
Wang

Appendix 5C: Selection of successful product introductions in The Netherlands

Aardingsweerstandsmeter
Afvoerkanaalsysteem voor de verwarmingsindustrie
Airconditioning service equipment voor de automotive industry
Aktiespel voor 3-6 jarigen
Apparaat om vaten braamvrij te openen
Bestaande drank in nieuwe verpakking
Beveiligingssysteem
Bevestiging van isolatie op platte daken
Boerenjoghurt roomijs
Bruiningsapparatuur
Cajun sauzen
Calcium-plus melk
Camera
CE gekeurde gasgestookte hangende luchtverwarmer
Centrale noodverlichting
Choq chocolademelk
Collectie badkamer accessoires
Compact transformatorstation
Compostcontainer
Constructieschuim
Consumentenprodukt gericht op bestrijden van allergiën
Designcollector
Diafilm Elite
Electronisch educatief vraag/antwoord spel
Eurocontainer
Expressoapparaat
Flexibel opslagsysteem voor staalrollen
Flexibel reparatiemiddel voor houten gevelelementen
Food processor
Gameboy
Geïntegreerde rupsaandrijving
Gekleurde polypropyleen compound
Gestandaardiseerde goederenheffer
Glasvezelkabels
Grondlak voor timmerindustrie
Grondverf
Groot volume oplegger t.b.v. kledingtransport
Haardroger met unieke feature
High-end scheerapparaat
Hoge capaciteitspomp
Home-theatre
Hoogspanningstransformator voor verwarmingsketels
Hybridefiets
Inbouwdozen voor elektrotechnische installaties

Appendix 5C: Selection of successful product introductions in The Netherlands (continued)

Industriële gasbranderinstallatie
Installatie automaat
Isolatieprodukt voor spouwmuren
Kinderbijzet tent
Koelkastenlijn
Koffiezetter
Kopieerapparaat voor repro-omgevingen
Kopieerapparaat voor het zeer-hoog volume segment
Kunststof vloerroosters
Luchtreizigers produkt
Menkomel koffiecreamer/slagroom
Micro audioset
Middenklasser auto
Milieuvriendelijke woonhuisaansluitingen
Mini Hifi audio systeem
Modulair bouwsysteem van polyester panelen
Modulaire schakel- en verdeelinrichtingen
Multiplex speeltoestellen
NETCOM
Passief infraroodsensoren voor beveiligingsmarkt
Piazza boodschappenfiets voor de vrouw
Private label frisdrank
Schrobzuigmachine
Segment transporteur
Signaalgevers voor specifieke klant
Snelle laserprinter voor dataprocessing toepassingen
Sorteerinstallatie
Starboard
Stofzuiger
Strauss-koppelingen
Stroomstrijkijzer
Transport van conservenblik
Tweede generatie beeldversterkerbuis met sterk verbeterde kathode
Unix-lijn minicomputer
ViewCam
Vloeistofhoeveelheids meters voor lage volumes in industrie
Vrachtauto
Vulinstallatie
Whiteboard-viltstiftboard

Appendix 5D: Selection of unsuccessful product introductions in The Netherlands

Aardlek meter
AFS fiets
Antislijtage materiaal
Automatische schuifdeur
Babyvoeding
Besturing voor betonmortel centrale
Betreedbaar compactstation
Biogarde karnemelk
Bodycare apparaat
Caravan
Chocomel met hazelnootsmaak
Controle/preventieapparaat voor detecteren van olieverontreiniging
Copieerapparaat
Diefstalbestendige fiets
Electronisch kompas
Electronische agenda
Electropallettruck
Electrotechnisch verdeelsysteem
Familietent met losse slaap units
Free flowing pigments for the colouring of PVC
Haarkrullers zonder clips
Horloge
HR ketel
IJstaart
Isolatieprodukt voor leidingisolatie
Isotone sportdrink
Karaoke Laserdisc
Lager segment auto
Langhoudbare desserts
Massageproduktenlijn
Maxipole omhulsel t.b.v. minicontainer
Mengers voor kunstmest
Milieuvriendelijke hoogglansverf
Modulair voertuig
Ontvochtigingsprodukt
Opbouwinstallatiesysteem
PenPad electronische agenda
Plantaardige kaas
Postscript printer
Private observer observatiesysteem
Procesautomatiseerder en bestuurder
Schrijfsmachine
Sensor Electro spel
Smeerkaasprodukt

Appendix 5D: Selection of unsuccessful product introductions in The Netherlands (continued)

Spel voor volwassenen
Stoffilter
Stroomstrijkijzer met afneembare watertank
Systeem voor toepassing van visuele kommunikatie en presentatiemiddelen
Technical information system
The Box luidsprekers
Verkleind model van gangbare beeldversterkerbuis
Volautomatisch palletteerinstallatie voor platmaterialen
Volautomatische enveloppe-opener
Vorkheftruck
Warmtebeeldcamera
Waterdragende grondlak
Waterkoker
Waterverdunbare houtverf voor buiten en binnen
Zelfdragende groot volume oplegger

Appendix 5E: Strategic launch decisions for successful and unsuccessful products (consumer products)

	Successful products N = 250*	Unsuccessful products N = 192*	Total sample N = 442*	Test statistic
Product innovativeness				
- more innovative	**48%**	25%	38%	$\chi^2(2)=34.8$;
- equally innovative	50%	**64%**	56%	$p<.0001$
- less innovative	2%	**11%**	6%	
NPD cycle time				
- less than 6 months	7%	7%	7%	$\chi^2(3)=43.5$;
- 6 months - 1 year	**30%**	17%	24%	$p<.0001$
- 1 - 3 years	**54%**	42%	49%	
- more than 3 years	9%	**34%**	20%	
Product newness				
- completely new	9%	12%	11%	$\chi^2(5)=11.4$;
- new product line	36%	37%	36%	$p<.05$
- addition to line	35%	40%	37%	
- improvement	**16%**	6%	12%	
- repositioning	3%	4%	4%	
- low cost	1%	1%	1%	
Perception customers				
- incremental improvement	46%	47%	46%	$\chi^2(2)=0.1$;
- major improvement	46%	44%	45%	$p=.94$
- never seen before	9%	9%	9%	
Targeting strategy				
- niche	24%	16%	20%	$\chi^2(2)=4.3$;
- selective	46%	46%	46%	$p=.12$
- mass-market	30%	38%	34%	
Market growth rate				
- less than 0%	8%	2%	5%	$\chi^2(3)=15.9$;
- 0% - 5%	38%	**52%**	44%	$p<.01$
- 5% - 10%	**42%**	30%	37%	
- more than 10%	12%	16%	14%	
Stage of the PLC				
- introduction	10%	15%	12%	$\chi^2(3)=4.0$;
- growth	38%	41%	39%	$p=.26$
- maturity	48%	42%	45%	
- decline	4%	3%	3%	
Market competitiveness				
- not one competitor	16%	12%	14%	$\chi^2(2)=3.6$;
- 1 to 3 competitors	46%	41%	44%	$p=.16$
- ≥ 4 competitors	38%	47%	42%	
Timing strategy				
- technological innovator	40%	38%	39%	$\chi^2(2)=0.9$;
- fast imitator	54%	55%	54%	$p=.95$
- cost reducer	7%	7%	7%	
Driver of NPD				
- completely market	5%	4%	5%	$\chi^2(3)=1.4$;
- mainly market	55%	58%	57%	$p=.70$
- mix market/technology	28%	24%	26%	
- mainly technology	12%	14%	12%	

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 5E: Strategic launch decisions for successful and unsuccessful products (consumer products) (continued)

	Successful products N = 250*	*Unsuccessful products* N = 192*	*Total sample* N = 442*	*Test statistic*
Objectives				
- expand product range	82%	78%	80%	$\chi^2(1)$=0.8; p=.36
- increase market penetration	71%	64%	68%	$\chi^2(1)$=2.9; p=.09
- **capitalize on existing market**	**65%**	50%	58%	$\chi^2(1)$=11.1; p<.001
- **barriers for competition**	**57%**	41%	50%	$\chi^2(1)$=10.7; p<.01
- **increase company's image**	**36%**	24%	31%	$\chi^2(1)$=6.4; p<.05
- produce at lower costs	25%	24%	25%	$\chi^2(1)$=0.1; p=.07
- capitalize on new technology	21%	28%	24%	$\chi^2(1)$=3.2; p=.75
- **utilize excess capacity**	15%	**27%**	20%	$\chi^2(1)$=8.8; p<.01
- foothold in new market	20%	17%	19%	$\chi^2(1)$=0.8; p=.38
- preempt emerging segment	18%	18%	18%	$\chi^2(1)$=0.1; p=.81
- offset seasonal cycle	8%	6%	7%	$\chi^2(1)$=0.8; p=.36

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 5F: Tactical launch decisions for successful and unsuccessful products (consumer products)

	Successful products N = 250*	Unsuccessful products N = 192*	Total sample N = 442*	Test statistic
Breadth of assortment				
- broader	**31%**	21%	27%	$\chi^2(2)=20.1$;
- equally broad	56%	48%	53%	$p<.0001$
- smaller	13%	**31%**	21%	
Branding strategy				
- new brand name	26%	**35%**	30%	$\chi^2(3)=24.5$;
- brand extension	**53%**	30%	43%	$p<.0001$
- company name	20%	**33%**	26%	
- generic / no brand	1%	2%	2%	
Distribution channels				
- current channels	82%	77%	80%	$\chi^2(2)=1.9$;
- new channels	2%	3%	3%	$p=.38$
- both current / new	16%	20%	17%	
Distribution expenditures				
- higher	**20%**	13%	17%	$\chi^2(2)=18.6$;
- about the same	73%	67%	71%	$p<.0001$
- lower	7%	**20%**	12%	
Price level				
- higher	24%	32%	27%	$\chi^2(2)=15.0$;
- about the same	**53%**	34%	45%	$p<.001$
- lower	23%	**34%**	28%	
Pricing strategy				
- skimming	27%	25%	26%	$\chi^2(2)=11.1$;
- penetration	**50%**	37%	45%	$p<.01$
- other	23%	**37%**	30%	
Promotion expenditures				
- higher	**31%**	14%	24%	$\chi^2(2)=21.5$;
- about the same	48%	50%	49%	$p<.0001$
- lower	21%	**36%**	28%	
Communication channels				
- salesforce promotion	77%	76%	77%	$\chi^2(1)=0.0$; $n=94$
- trade promotion	76%	75%	76%	$\chi^2(1)=0.1$; $p=.72$
- customer promotion	79%	72%	76%	$\chi^2(1)=3.6$; $p=.06$
- personal selling	45%	40%	43%	$\chi^2(1)=1.4$; $p=.23$
- **print-advertising**	**44%**	28%	37%	$\chi^2(1)=11.7$; $p<.001$
- **public relations**	**33%**	24%	29%	$\chi^2(1)=4.1$; $p<.05$
- direct marketing	30%	24%	27%	$\chi^2(1)=2.1$; $p=.15$
- **tv-advertising**	**25%**	15%	20%	$\chi^2(1)=6.5$; $p<.05$
- trade shows	14%	13%	14%	$\chi^2(1)=0.2$; $p=.65$
- **radio-advertising**	**14%**	6%	10%	$\chi^2(1)=7.3$; $p<.01$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 5G: Strategic launch decisions for successful and unsuccessful products (industrial products)

	Successful products N = 345*	Unsuccessful products N = 231*	Total sample N = 576*	Test statistic
Product innovativeness				
- more innovative	**58%**	37%	49%	$\chi^2(2)=36.0$;
- equally innovative	38%	**47%**	42%	$p<.0001$
- less innovative	4%	**16%**	9%	
NPD cycle time				
- less than 6 months	8%	5%	7%	$\chi^2(3)=49.7$;
- 6 months - 1 year	**34%**	18%	27%	$p<.0001$
- 1 - 3 years	49%	45%	47%	
- more than 3 years	10%	**32%**	19%	
Product newness				
- completely new	14%	19%	16%	$\chi^2(5)=35.4$;
- new product line	22%	**32%**	26%	$p<.0001$
- addition to line	29%	34%	31%	
- improvement	**29%**	10%	21%	
- repositioning	2%	3%	3%	
- low cost	4%	1%	3%	
Perception customers				
- incremental improvement	24%	28%	26%	$\chi^2(2)=3.4$;
- major improvement	62%	63%	63%	$p=.18$
- never seen before	14%	9%	12%	
Targeting strategy				
- niche	31%	25%	29%	$\chi^2(2)=5.0$;
- selective	46%	45%	46%	$p=.08$
- mass-market	22%	**30%**	25%	
Market growth rate				
- less than 0%	5%	**10%**	7%	$\chi^2(3)=12.4$;
- 0% - 5%	40%	47%	43%	$p<.01$
- 5% - 10%	29%	27%	29%	
- more than 10%	**26%**	16%	22%	
Stage of the PLC				
- introduction	15%	**23%**	18%	$\chi^2(3)=8.2$;
- growth	36%	36%	36%	$p<.05$
- maturity	**47%**	38%	43%	
- decline	2%	3%	3%	
Market competitiveness				
- not one competitor	16%	16%	16%	$\chi^2(2)=8.4$;
- 1 to 3 competitors	**46%**	35%	42%	$p<.05$
- ≥ 4 competitors	38%	**49%**	42%	
Timing strategy				
- technological innovator	48%	50%	49%	$\chi^2(2)=0.2$;
- fast imitator	46%	44%	45%	$p=.88$
- cost reducer	6%	6%	6%	
Driver of NPD				
- completely market	6%	4%	5%	$\chi^2(3)=2.2$;
- mainly market	45%	46%	45%	$p=.54$
- mix market/technology	34%	35%	34%	
- mainly technology	15%	17%	16%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 5G: Strategic launch decisions for successful and unsuccessful products (industrial products) (continued)

	Successful products N = 345*	Unsuccessful products N = 231*	Total sample N = 576*	Test statistic
Objectives				
- expand product range	72%	68%	71%	$\chi^2(1)=1.0; p=.33$
- **increase market penetration**	**68%**	56%	63%	$\chi^2(1)=8.1; p<.01$
- capitalize on existing market	55%	46%	51%	$\chi^2(1)=3.7; p=.05$
- capitalize on new technology	41%	35%	39%	$\chi^2(1)=2.4; p=.12$
- barriers for competition	37%	36%	37%	$\chi^2(1)=0.0; p=.83$
- **produce at lower costs**	**36%**	22%	30%	$\chi^2(1)=12.9; p<.001$
- foothold in new market	27%	25%	26%	$\chi^2(1)=0.4; p=.54$
- **increase company's image**	**27%**	20%	24%	$\chi^2(1)=4.2; p<.05$
- preempt emerging segment	17%	18%	17%	$\chi^2(1)=0.3; p=.60$
- utilize excess capacity	10%	10%	10%	$\chi^2(1)=0.0; p=.85$
- offset seasonal cycle	5%	5%	5%	$\chi^2(1)=0.0; p=.94$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 5H: Tactical launch decisions for successful and unsuccessful products (industrial products)

	Successful products N = 345*	Unsuccessful products N = 231*	Total sample N = 576*	Test statistic
Breadth of assortment				
- broader	**39%**	21%	32%	$\chi^2(2)=49.0$;
- equally broad	46%	39%	43%	$p<.0001$
- smaller	15%	**40%**	25%	
Branding strategy				
- new brand name	28%	**37%**	31%	$\chi^2(3)=5.2$;
- brand extension	32%	29%	31%	$p=.15$
- company name	34%	28%	32%	
- generic / no brand	7%	6%	6%	
Distribution channels				
- current channels	77%	70%	74%	$\chi^2(2)=6.3$;
- new channels	5%	**10%**	7%	$p<.05$
- both current / new	18%	20%	19%	
Distribution expenditures				
- higher	16%	16%	16%	$\chi^2(2)=15.4$;
- about the same	**70%**	57%	65%	$p<.001$
- lower	14%	**27%**	19%	
Price level				
- higher	34%	29%	32%	$\chi^2(2)=5.1$;
- about the same	41%	37%	39%	$p=.08$
- lower	25%	**34%**	29%	
Pricing strategy				
- skimming	35%	33%	34%	$\chi^2(2)=0.9$;
- penetration	42%	40%	41%	$p=.65$
- other	24%	27%	25%	
Promotion expenditures				
- higher	25%	23%	24%	$\chi^2(2)=8.7$;
- about the same	**49%**	39%	45%	$p<.05$
- lower	26%	**38%**	31%	
Communication channels				
- salesforce promotion	79%	76%	78%	$\chi^2(1)=0.6$; $p=.43$
- trade promotion	65%	66%	66%	$\chi^2(1)=0.0$; $p=.90$
- personal selling	56%	56%	56%	$\chi^2(1)=0.0$; $p=.88$
- **direct marketing**	**49%**	35%	44%	$\chi^2(1)=11.3$; $p<.001$
- customer promotion	35%	35%	35%	$\chi^2(1)=0.0$; $p=.87$
- public relations	37%	32%	35%	$\chi^2(1)=1.7$; $p=.19$
- **print-advertising**	**36%**	24%	31%	$\chi^2(1)=8.4$; $p<.01$
- trade shows	12%	11%	12%	$\chi^2(1)=0.1$; $p=.76$
- radio-advertising	2%	1%	2%	$\chi^2(1)=1.7$; $p=.19$
- tv-advertising	1%	0%	1%	$\chi^2(1)=0.8$; $p=.36$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 5I: Strategic launch decisions for successful and unsuccessful products (Dutch introductions)

	Successful products N = 146*	Unsuccessful products N = 97*	Total sample N = 243*	Test statistic
Product innovativeness				
- more innovative	**66%**	40%	56%	$\chi^2(2)$=23.7;
- equally innovative	33%	**48%**	39%	$p<.0001$
- less innovative	1%	**12%**	5%	
NPD cycle time				
- less than 6 months	17%	17%	17%	$\chi^2(3)$=1.0;
- 6 months - 1 year	40%	37%	38%	$p=.81$
- 1 - 3 years	37%	37%	37%	
- more than 3 years	7%	10%	8%	
Product newness				
- completely new	14%	**25%**	18%	$\chi^2(5)$=11.7;
- new product line	32%	32%	32%	$p<.05$
- addition to line	28%	28%	28%	
- improvement	**21%**	7%	16%	
- repositioning	3%	5%	4%	
- low cost	2%	2%	2%	
Perception customers				
- incremental improvement	27%	34%	30%	$\chi^2(2)$=1.8;
- major improvement	61%	58%	60%	$p=.41$
- never seen before	12%	8%	10%	
Targeting strategy				
- niche	17%	19%	18%	$\chi^2(2)$=0.1;
- selective	49%	47%	48%	$p=.94$
- mass-market	34%	34%	34%	
Market growth rate				
- less than 0%	14%	20%	16%	$\chi^2(3)$=4.4;
- 0% - 5%	45%	46%	45%	$p=.22$
- 5% - 10%	16%	21%	18%	
- more than 10%	24%	14%	20%	
Stage of the PLC				
- introduction	17%	**32%**	23%	$\chi^2(3)$=11.7;
- growth	**47%**	31%	41%	$p<.01$
- maturity	33%	31%	32%	
- decline	3%	7%	5%	
Market competitiveness				
- not one competitor	17%	16%	17%	$\chi^2(2)$=0.8;
- 1 to 3 competitors	35%	40%	37%	$p=.69$
- ≥ 4 competitors	48%	44%	47%	
Timing strategy				
- technological innovator	45%	40%	43%	$\chi^2(2)$=0.7;
- fast imitator	46%	50%	48%	$p=.69$
- cost reducer	9%	10%	10%	
Driver of NPD				
- completely market	6%	3%	5%	$\chi^2(3)$=1.8;
- mainly market	43%	39%	41%	$p=.61$
- mix market/technology	40%	43%	41%	
- mainly technology	12%	14%	13%	

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 5I: Strategic launch decisions for successful and unsuccessful products (Dutch introductions) (continued)

	Successful products N = 146*	Unsuccessful products N = 97*	Total sample N = 243*	Test statistic
Objectives				
- expand product range	68%	67%	67%	$\chi^2(1)=0.0$; $p=.88$
- **increase market penetration**	**62%**	42%	54%	$\chi^2(1)=9.7$; $p<.01$
- capitalize on existing market	43%	38%	41%	$\chi^2(1)=0.8$; $p=.36$
- preempt emerging segment	37%	35%	36%	$\chi^2(1)=0.0$; $p=.86$
- capitalize on new technology	29%	26%	28%	$\chi^2(1)=0.2$; $p=.62$
- increase company's image	30%	25%	28%	$\chi^2(1)=0.8$; $p=.37$
- foothold in new market	22%	33%	27%	$\chi^2(1)=3.8$; $p=.05$
- **barriers for competition**	**30%**	18%	25%	$\chi^2(1)=4.4$; $p<.05$
- **produce at lower costs**	**18%**	4%	12%	$\chi^2(1)=10.0$; $p<.01$
- utilize excess capacity	8%	6%	8%	$\chi^2(1)=0.3$; $p=.56$
- offset seasonal cycle	3%	6%	5%	$\chi^2(1)=1.0$; $p=.31$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 5J: Tactical launch decisions for successful and unsuccessful products (Dutch introductions)

	Successful products N = 146*	Unsuccessful products N = 97*	Total sample N = 243*	Test statistic
Breadth of assortment				
- broader	**55%**	35%	47%	$\chi^2(2)$=13.3;
- equally broad	31%	34%	32%	p<.01
- smaller	14%	**32%**	21%	
Branding strategy				
- new brand name	28%	34%	30%	$\chi^2(3)$=2.4;
- brand extension	20%	21%	21%	p=.49
- company name	46%	36%	42%	
- generic / no brand	6%	9%	7%	
Distribution channels				
- current channels	82%	76%	80%	$\chi^2(2)$=10.7;
- new channels	4%	**15%**	8%	p<.01
- both current / new	14%	9%	12%	
Distribution expenditures				
- higher	18%	16%	17%	$\chi^2(2)$=3.0;
- about the same	61%	52%	58%	p=.23
- lower	21%	31%	25%	
Price level				
- higher	39%	43%	41%	$\chi^2(2)$=0.6;
- about the same	35%	36%	36%	p=.74
- lower	25%	21%	24%	
Pricing strategy				
- skimming	32%	39%	34%	$\chi^2(2)$=1.6;
- penetration	41%	35%	39%	p=.46
- other	27%	26%	27%	
Promotion expenditures				
- higher	40%	28%	35%	$\chi^2(2)$=4.0;
- about the same	29%	40%	33%	p=.14
- lower	32%	32%	32%	
Communication channels				
- personal selling	65%	57%	62%	$\chi^2(1)$=1.7; p=.19
- salesforce promotion	49%	51%	49%	$\chi^2(1)$=0.1; p=.77
- trade promotion	44%	51%	47%	$\chi^2(1)$=1.0; p=.31
- public relations	43%	40%	42%	$\chi^2(1)$=0.1; p=.73
- direct marketing	34%	29%	32%	$\chi^2(1)$=0.8; p=.38
- print-advertising	33%	28%	31%	$\chi^2(1)$=0.7; p=.40
- customer promotion	21%	20%	21%	$\chi^2(1)$=0.1; p=.76
- tv-advertising	11%	7%	10%	$\chi^2(1)$=1.0; p=.33
- trade shows	12%	8%	10%	$\chi^2(1)$=0.7; p=.39
- radio-advertising	6%	5%	5%	$\chi^2(1)$=0.0; p=.91

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 5K: Strategic launch decisions for successful and unsuccessful products (U.K. introductions)

	Successful products N = 292*	Unsuccessful products N = 199*	Total sample N = 491*	Test statistic
Product innovativeness				$\chi^2(2)=37.9$;
- more innovative	**38%**	15%	29%	$p<.0001$
- equally innovative	56%	**70%**	62%	
- less innovative	6%	**16%**	10%	
NPD cycle time				$\chi^2(3)=158.1$;
- less than 6 months	**3%**	1%	17%	$p<.0001$
- 6 months - 1 year	**32%**	3%	38%	
- 1 - 3 years	**61%**	47%	37%	
- more than 3 years	5%	**49%**	8%	
Product newness				$\chi^2(5)=42.4$;
- completely new	8%	2%	5%	$p<.0001$
- new product line	31%	**42%**	35%	
- addition to line	35%	**48%**	40%	
- improvement	**23%**	7%	16%	
- repositioning	1%	2%	2%	
- low cost	3%	0%	2%	
Perception customers				$\chi^2(2)=1.9$;
- incremental improvement	33%	34%	33%	$p=.39$
- major improvement	56%	59%	57%	
- never seen before	11%	8%	10%	
Targeting strategy				$\chi^2(2)=21.4$;
- niche	**30%**	13%	23%	$p<.0001$
- selective	49%	54%	51%	
- mass-market	21%	**33%**	26%	
Market growth rate				$\chi^2(3)=18.8$;
- less than 0%	4%	2%	3%	$p<.001$
- 0% - 5%	34%	**54%**	42%	
- 5% - 10%	**49%**	35%	43%	
- more than 10%	13%	10%	12%	
Stage of the PLC				$\chi^2(3)=7.9$;
- introduction	4%	3%	3%	$p<.05$
- growth	34%	**47%**	39%	
- maturity	**60%**	49%	55%	
- decline	2%	2%	2%	
Market competitiveness				$\chi^2(2)=25.1$;
- not one competitor	5%	3%	4%	$p<.0001$
- 1 to 3 competitors	**56%**	36%	48%	
- ≥ 4 competitors	39%	**62%**	48%	
Timing strategy				$\chi^2(2)=0.1$;
- technological innovator	37%	38%	37%	$p=.97$
- fast imitator	60%	59%	60%	
- cost reducer	3%	4%	4%	
Driver of NPD				$\chi^2(3)=2.8$;
- completely market	7%	5%	6%	$p=.43$
- mainly market	65%	71%	67%	
- mix market/technology	22%	19%	21%	
- mainly technology	7%	5%	6%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 5K: Strategic launch decisions for successful and unsuccessful products (U.K. introductions) (continued)

	Successful products N = 292*	Unsuccessful products N = 199*	Total sample N = 491*	Test statistic
Objectives				
- expand product range	90%	87%	89%	$\chi^2(1)=0.6; p=.43$
- increase market penetration	82%	82%	82%	$\chi^2(1)=0.0; p=.99$
- capitalize on existing market	77%	69%	74%	$\chi^2(1)=3.8; p=.05$
- barriers for competition	62%	55%	59%	$\chi^2(1)=2.0; p=.16$
- produce at lower costs	47%	39%	43%	$\chi^2(1)=3.0; p=.09$
- capitalize on new technology	28%	29%	29%	$\chi^2(1)=0.0; p=.96$
- **increase company's image**	**34%**	18%	28%	$\chi^2(1)=16.5; p<.0001$
- **utilize excess capacity**	16%	**28%**	21%	$\chi^2(1)=11.0; p<.001$
- **foothold in new market**	**20%**	11%	16%	$\chi^2(1)=6.3; p<.05$
- preempt emerging segment	11%	8%	10%	$\chi^2(1)=1.1; p=.29$
- **offset seasonal cycle**	10%	4%	7%	$\chi^2(1)=5.4; p<.05$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 5L: Tactical launch decisions for successful and unsuccessful products (U.K. introductions)

	Successful products N = 292*	Unsuccessful products N = 199*	Total sample N = 491*	Test statistic
Breadth of assortment				
- broader	**18%**	7%	13%	$\chi^2(2)=42.2$;
- equally broad	**69%**	55%	63%	$p<.0001$
- smaller	14%	**38%**	23%	
Branding strategy				
- new brand name	23%	**33%**	27%	$\chi^2(3)=18.7$;
- brand extension	**60%**	41%	52%	$p<.001$
- company name	15%	**24%**	18%	
- generic / no brand	2%	3%	2%	
Distribution channels				
- current channels	**78%**	67%	73%	$\chi^2(2)=8.2$;
- new channels	1%	2%	1%	$p<.05$
- both current / new	22%	**31%**	26%	
Distribution expenditures				
- higher	**15%**	8%	12%	$\chi^2(2)=30.8$;
- about the same	**81%**	73%	78%	$p<.0001$
- lower	4%	**19%**	10%	
Price level				
- higher	15%	14%	14%	$\chi^2(2)=19.9$;
- about the same	**56%**	37%	48%	$p<.0001$
- lower	29%	**49%**	37%	
Pricing strategy				
- skimming	**22%**	8%	17%	$\chi^2(2)=28.2$;
- penetration	53%	49%	51%	$p<.0001$
- other	25%	**43%**	32%	
Promotion expenditures				
- higher	**22%**	10%	18%	$\chi^2(2)=35.4$;
- about the same	**61%**	51%	57%	$p<.0001$
- lower	16%	**39%**	26%	
Communication channels				
- salesforce promotion	91%	88%	90%	$\chi^2(1)=0.7$; $p=.40$
- trade promotion	83%	83%	83%	$\chi^2(1)=0.0$; $p=.89$
- customer promotion	73%	76%	74%	$\chi^2(1)=0.6$; $p=.44$
- personal selling	43%	39%	41%	$\chi^2(1)=0.5$; $p=.50$
- **direct marketing**	**44%**	31%	39%	$\chi^2(1)=8.2$; $p<.01$
- **print-advertising**	**37%**	16%	29%	$\chi^2(1)=25.1$; $p<.0001$
- **public relations**	**29%**	18%	24%	$\chi^2(1)=7.9$; $p<.01$
- trade shows	15%	16%	15%	$\chi^2(1)=0.0$; $p=.86$
- **tv-advertising**	**11%**	5%	8%	$\chi^2(1)=4.8$; $p<.05$
- **radio-advertising**	**9%**	2%	6%	$\chi^2(1)=9.1$; $p<.01$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 5M: Strategic launch decisions for successful and unsuccessful products (U.S. introductions)

	Successful products N = 160*	Unsuccessful products N = 128*	Total sample N = 288*	Test statistic
Product innovativeness				
- more innovative	**72%**	50%	63%	$\chi^2(2)=22.2$;
- equally innovative	26%	37%	31%	$p<.0001$
- less innovative	1%	**13%**	6%	
NPD cycle time				
- less than 6 months	6%	6%	6%	$\chi^2(3)=0.6$;
- 6 months - 1 year	26%	26%	26%	$p=.91$
- 1 - 3 years	46%	42%	44%	
- more than 3 years	21%	25%	23%	
Product newness				
- completely new	19%	**33%**	25%	$\chi^2(5)=17.2$;
- new product line	17%	23%	20%	$p<.01$
- addition to line	31%	26%	29%	
- improvement	**26%**	10%	19%	
- repositioning	4%	6%	5%	
- low cost	3%	2%	2%	
Perception customers				
- incremental improvement	39%	42%	40%	$\chi^2(2)=0.3$;
- major improvement	49%	46%	48%	$p=.86$
- never seen before	12%	12%	12%	
Targeting strategy				
- niche	36%	36%	36%	$\chi^2(2)=2.0$;
- selective	38%	31%	35%	$p=.36$
- mass-market	26%	33%	29%	
Market growth rate				
- less than 0%	3%	4%	4%	$\chi^2(3)=0.6$;
- 0% - 5%	42%	46%	44%	$p=.90$
- 5% - 10%	24%	22%	23%	
- more than 10%	30%	28%	29%	
Stage of the PLC				
- introduction	25%	**36%**	30%	$\chi^2(3)=5.6$;
- growth	31%	30%	31%	$p=.16$
- maturity	40%	32%	37%	
- decline	4%	2%	3%	
Market competitiveness				
- not one competitor	35%	32%	33%	$\chi^2(2)=0.4$;
- 1 to 3 competitors	39%	40%	39%	$p=.84$
- ≥ 4 competitors	27%	28%	27%	
Timing strategy				
- technological innovator	59%	59%	59%	$\chi^2(2)=0.0$;
- fast imitator	32%	32%	32%	$p=1.00$
- cost reducer	9%	9%	9%	
Driver of NPD				
- completely market	3%	3%	3%	$\chi^2(3)=0.9$;
- mainly market	28%	30%	29%	$p=.82$
- mix market/technology	41%	36%	39%	
- mainly technology	28%	31%	29%	

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 5M: Strategic launch decisions for successful and unsuccessful products (U.S. introductions) (continued)

	Successful products N = 160*	Unsuccessful products N = 128*	Total sample N = 288*	Test statistic
Objectives				
- expand product range	59%	54%	57%	$\chi^2(1)=0.5; p=.48$
- **increase market penetration**	**52%**	37%	46%	$\chi^2(1)=6.6; p<.05$
- capitalize on new technology	44%	41%	43%	$\chi^2(1)=0.3; p=.60$
- **capitalize on existing market**	**40%**	22%	32%	$\chi^2(1)=10.1; p<.01$
- foothold in new market	27%	37%	32%	$\chi^2(1)=3.3; p=.07$
- barriers for competition	28%	27%	28%	$\chi^2(1)=0.1; p=.77$
- increase company's image	24%	25%	25%	$\chi^2(1)=0.1; p=.80$
- preempt emerging segment	15%	19%	16%	$\chi^2(1)=1.0; p=.31$
- produce at lower costs	16%	12%	14%	$\chi^2(1)=0.9; p=.34$
- utilize excess capacity	10%	9%	10%	$\chi^2(1)=0.0; p=.86$
- offset seasonal cycle	2%	6%	4%	$\chi^2(1)=3.7; p=.05$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products that were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

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Appendix 5N: Tactical launch decisions for successful and unsuccessful products (U.S. introductions)

	Successful products N = 160*	Unsuccessful products N = 128*	Total sample N = 288*	Test statistic
Breadth of assortment				
- broader	**53%**	33%	44%	$\chi^2(2)=15.4$;
- equally broad	31%	32%	31%	$p<.001$
- smaller	16%	**35%**	25%	
Branding strategy				
- new brand name	34%	42%	38%	$\chi^2(3)=2.4$;
- brand extension	22%	17%	20%	$p=.49$
- company name	38%	37%	37%	
- generic / no brand	6%	4%	5%	
Distribution channels				
- current channels	81%	82%	81%	$\chi^2(2)=0.1$;
- new channels	9%	8%	8%	$p=.96$
- both current / new	11%	10%	11%	
Distribution expenditures				
- higher	24%	24%	24%	$\chi^2(2)=4.9$;
- about the same	60%	50%	55%	$p=.09$
- lower	16%	**27%**	21%	
Price level				
- higher	52%	51%	52%	$\chi^2(2)=1.6$;
- about the same	36%	31%	34%	$p=.44$
- lower	12%	18%	15%	
Pricing strategy				
- skimming	48%	56%	51%	$\chi^2(2)=2.1$;
- penetration	34%	27%	31%	$p=.36$
- other	19%	17%	18%	
Promotion expenditures				
- higher	26%	26%	26%	$\chi^2(2)=1.3$;
- about the same	42%	35%	39%	$p=.52$
- lower	33%	39%	35%	
Communication channels				
- salesforce promotion	80%	77%	79%	$\chi^2(1)=0.5$; $p=.48$
- trade promotion	65%	65%	66%	$\chi^2(1)=1.0$; $p=.32$
- personal selling	56%	55%	56%	$\chi^2(1)=0.0$; $p=.89$
- print-advertising	48%	40%	45%	$\chi^2(1)=2.0$; $p=.16$
- customer promotion	48%	37%	43%	$\chi^2(1)=3.4$; $p=.06$
- public relations	41%	36%	39%	$\chi^2(1)=0.9$; $p=.36$
- **direct marketing**	**41%**	28%	36%	$\chi^2(1)=5.5$; $p<.05$
- tv-advertising	12%	10%	11%	$\chi^2(1)=0.3$; $p=.61$
- trade shows	11%	9%	10%	$\chi^2(1)=0.3$; $p=.57$
- radio-advertising	6%	3%	5%	$\chi^2(1)=1.0$; $p=.31$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products that used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 6A: Factor structure for the new product performance measures (original solution with all 15 performance indicators included)*

Indicators	Factor 1 *Market Acceptance*	Factor 2 *Financial Performance*	Factor 3 *Product Performance*	Communality
Unit sales goals	.93	-.08	-.24	.93
Revenue growth goals	.91	-.01	-.12	.85
Revenue goals	.89	.06	-.26	.87
Market share goals	.66	.19	.07	.48
Product performance	-.74	-.44	-.23	.79
Quality guidelines	-.68	-.47	-.15	.71
Margin goals	-.18	.86	-.05	.78
IRR/ROI goals	.27	.85	.12	.81
Break even time	.11	.77	.30	.70
Profitability goals	.50	.61	-.25	.69
Launched on time	-.15	-.17	.92	.90
Speed to market	-.17	-.03	.90	.85
Development budget	-.48	.17	.78	.86
Customer acceptance	.05	-.31	-.67	.54
Customer satisfaction	-.44	-.41	-.63	.76
Eigenvalue	5.64	4.07	1.84	
Explained variance	37.6%	27.2%	12.2%	
Cumulative	37.6%	64.8%	77.0%	

* After principal components analysis and varimax rotation. All analyses were done on a partial correlation matrix controlling for the outcome status of the introduction: successful or unsuccessful.

Appendix 7A: Strategic launch decisions for consumer and industrial products (Dutch introductions)

	Consumer Products N = 91*	Industrial Products N = 148*	Total Sample N = 239*	Test-statistic
Product innovativeness				
- more innovative	56%	56%	56%	$\chi^2(2)=0.1$;
- equally innovative	40%	39%	39%	$p=.94$
- less innovative	5%	6%	5%	
NPD cycle time				
- less than 6 months	16%	18%	17%	$\chi^2(3)=2.0$;
- 6 months - 1 year	42%	36%	38%	$p=.58$
- 1 - 3 years	32%	39%	36%	
- more than 3 years	10%	7%	9%	
Product newness				
- completely new	20%	18%	19%	$\chi^2(5)=6.1$;
- new product line	34%	32%	33%	$p=.30$
- addition to line	30%	26%	28%	
- improvement	9%	20%	16%	
- repositioning	6%	3%	4%	
- lower cost	1%	2%	2%	
Perception customers				
- incremental improvement	**46%**	21%	30%	$\chi^2(2)=20.3$;
- performance improvement	41%	**70%**	59%	$p<.0001$
- never seen before	13%	9%	11%	
Targeting strategy				
- niche	12%	19%	17%	$\chi^2(2)=6.1$;
- selective	44%	52%	49%	$p<.05$
- mass-market	**44%**	29%	34%	
Market growth rate				
- less than 0%	18%	16%	17%	$\chi^2(3)=2.4$;
- 0% - 5%	51%	42%	45%	$p=.49$
- 5% - 10%	15%	20%	18%	
- more than 10%	17%	23%	20%	
Stage of the PLC				
- introduction	20%	25%	23%	$\chi^2(3)=10.9$;
- growth	32%	**47%**	41%	$p<.05$
- maturity	**42%**	24%	31%	
- decline	7%	3%	5%	
Market competitiveness				
- not one competitor	20%	15%	17%	$\chi^2(2)=1.1$;
- 1 to 3 competitors	35%	37%	36%	$p=.58$
- $\geq$ 4 competitors	45%	48%	47%	
Timing strategy				
- technological innovator	41%	44%	43%	$\chi^2(2)=0.5$;
- fast imitator	48%	47%	48%	$p=.78$
- cost reducer	11%	9%	10%	
Driver of NPD				
- completely market	3%	6%	5%	$\chi^2(3)=1.6$;
- mainly market	42%	40%	41%	$p=.66$
- mix market/technology	44%	40%	41%	
- mainly technology	11%	14%	13%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 7A: Strategic launch decisions for consumer and industrial products (Dutch introductions) (continued)

	Consumer Products N = 91*	Industrial Products N = 148*	Total Sample N = 239*	Test-statistic
Objectives				
- expand product range	67%	67%	67%	$\chi^2(1)=0.1; p=.93$
- increase penetration	56%	53%	54%	$\chi^2(1)=0.3; p=.60$
- utilize existing market	44%	41%	42%	$\chi^2(1)=0.2; p=.62$
- **emerging market segment**	**47%**	30%	36%	$\chi^2(1)=7.3; p<.01$
- **utilize new technology**	20%	**32%**	28%	$\chi^2(1)=4.1; p<.05$
- **increase company's image**	**37%**	23%	28%	$\chi^2(1)=5.5; p<.05$
- foothold in new market	26%	28%	27%	$\chi^2(1)=0.1; p=.75$
- barriers for competition	24%	26%	25%	$\chi^2(1)=0.2; p=.64$
- **lower costs possible**	3%	**18%**	12%	$\chi^2(1)=10.4; p<.01$
- utilize excess capacity	7%	8%	8%	$\chi^2(1)=0.1; p=.70$
- extend seasonal cycle	6%	4%	5%	$\chi^2(1)=0.3; p=.56$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 7B: Tactical launch decisions for consumer and industrial products (Dutch introductions)

	Consumer Products N = 91*	Industrial Products N = 148*	Total Sample N = 239*	Test-statistic
Breadth of assortment				
- broader	51%	45%	47%	$\chi^2(2)=0.8$;
- equally broad	29%	34%	32%	$p=.67$
- smaller	20%	21%	21%	
Branding strategy				
- new brand name	24%	34%	30%	$\chi^2(3)=15.2$;
- brand extension	**33%**	13%	21%	$p<.01$
- company name	40%	43%	42%	
- generic / no brand	3%	10%	7%	
Distribution channels				
- current channels	87%	75%	79%	$\chi^2(2)=5.8$;
- new channels	3%	12%	8%	$p=.06$
- both current / new	10%	14%	12%	
Distribution expenditures				
- higher	21%	15%	17%	$\chi^2(2)=2.1$;
- about the same	57%	58%	58%	$p=.35$
- lower	21%	28%	25%	
Price level				
- higher	38%	43%	41%	$\chi^2(2)=0.6$;
- about the same	37%	36%	36%	$p=.76$
- lower	25%	22%	23%	
Pricing strategy				
- skimming	32%	36%	35%	$\chi^2(2)=1.1$;
- penetration	37%	39%	38%	$p=.57$
- other	31%	25%	27%	
Promotion expenditures				
- higher	39%	34%	36%	$\chi^2(2)=0.8$;
- about the same	33%	33%	33%	$p=.67$
- lower	28%	33%	31%	
Communication channels			·	
- personal selling	45%	**72%**	62%	$\gamma^2(1)=17.7$; $p<.0001$
- salesforce promotion	44%	53%	49%	$\chi^2(1)=1.7$; $p=.19$
- trade promotion	**68%**	35%	47%	$\chi^2(1)=25.6$; $p<.0001$
- public relations	42%	42%	42%	$\chi^2(1)=0.0$; $p=.98$
- direct marketing	15%	**43%**	32%	$\chi^2(1)=19.1$; $p<.0001$
- print-advertising	**43%**	24%	31%	$\chi^2(1)=9.0$; $p<.01$
- customer promotion	**45%**	6%	21%	$\chi^2(1)=51.7$; $p<.0001$
- trade shows	11%	10%	10%	$\chi^2(1)=0.1$; $p=.70$
- tv-advertising	**24%**	1%	10%	$\chi^2(1)=35.8$; $p<.0001$
- radio-advertising	**12%**	1%	5%	$\chi^2(1)=12.6$; $p<.001$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 7C: Strategic launch decisions for consumer and industrial products (U.K. introductions)

	Consumer Products N = 260*	Industrial Products N = 231*	Total Sample N = 491*	Test-statistic
Product innovativeness				
- more innovative	24%	**33%**	29%	$\chi^2(2)=16.6$;
- equally innovative	**70%**	53%	62%	$p<.001$
- less innovative	6%	**14%**	10%	
NPD cycle time				
- less than 6 months	3%	1%	2%	$\chi^2(3)=10.6$;
- 6 months - 1 year	15%	**26%**	20%	$p<.05$
- 1 - 3 years	58%	52%	55%	
- more than 3 years	25%	21%	23%	
Product newness				
- completely new	3%	**8%**	5%	$\chi^2(5)=27.0$;
- new product line	**42%**	28%	35%	$p<.0001$
- addition to line	40%	39%	40%	
- improvement	12%	**21%**	16%	
- repositioning	2%	1%	1%	
- lower cost	1%	**3%**	2%	
Perception customers				
- incremental improvement	**46%**	19%	33%	$\chi^2(2)=51.7$;
- performance improvement	50%	**65%**	57%	$p<.0001$
- never seen before	4%	**17%**	10%	
Targeting strategy				
- niche	19%	28%	23%	$\chi^2(2)=5.7$;
- selective	53%	49%	51%	$p=.06$
- mass-market	29%	23%	26%	
Market growth rate				
- less than 0%	3%	3%	3%	$\chi^2(3)=3.2$;
- 0% - 5%	42%	43%	42%	$p=.36$
- 5% - 10%	46%	40%	43%	
- more than 10%	10%	14%	12%	
Stage of the PLC				
- introduction	3%	4%	3%	$\chi^2(3)=10.8$;
- growth	**44%**	35%	39%	$p<.05$
- maturity	50%	**61%**	55%	
- decline	**4%**	1%	2%	
Market competitiveness				
- not one competitor	**7%**	0%	4%	$\chi^2(2)=18.0$;
- 1 to 3 competitors	48%	49%	48%	$p<.001$
- $\geq$ 4 competitors	45%	51%	48%	
Timing strategy				
- technological innovator	34%	40%	37%	$\chi^2(2)=5.1$;
- fast imitator	61%	58%	60%	$p=.08$
- cost reducer	5%	2%	4%	
Driver of NPD				
- completely market	5%	7%	6%	$\chi^2(3)=11.1$;
- mainly market	68%	67%	67%	$p<.05$
- mix market/technology	19%	23%	21%	
- mainly technology	**9%**	3%	6%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 7C: Strategic launch decisions for consumer and industrial products (U.K. introductions) (continued)

	Consumer Products N = 260*	Industrial Products N = 231*	Total Sample N = 491*	Test-statistic
Objectives				
- expand product range	91%	87%	89%	$\chi^2(1)=2.2; p=.14$
- **increase penetration**	78%	**87%**	82%	$\chi^2(1)=6.5; p<.05$
- utilize existing market	72%	75%	74%	$\chi^2(1)=0.4; p=.52$
- **barriers for competition**	**68%**	49%	59%	$\chi^2(1)=18.6; p<.0001$
- **lower costs possible**	38%	**50%**	43%	$\chi^2(1)=7.3; p<.01$
- **utilize new technology**	20%	**38%**	29%	$\chi^2(1)=17.9; p<.0001$
- increase company's image	28%	27%	28%	$\chi^2(1)=0.1; p=.76$
- **utilize excess capacity**	**28%**	13%	21%	$\chi^2(1)=17.9; p<.0001$
- foothold in new market	14%	19%	16%	$\chi^2(1)=2.8; p=.09$
- emerging market segment	9%	11%	10%	$\chi^2(1)=0.5; p=.46$
- extend seasonal cycle	7%	7%	7%	$\chi^2(1)=0.0; p=.98$

Note: True N per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 7D: Tactical launch decisions for consumer and industrial products (U.K. introductions)

	Consumer Products N = 260*	Industrial Products N = 231*	Total Sample N = 491*	Test-statistic
Breadth of assortment				
- broader	14%	12%	13%	$\chi^2(2)$=0.5;
- equally broad	63%	64%	63%	p=.76
- smaller	23%	24%	23%	
Branding strategy				
- new brand name	27%	26%	27%	$\chi^2(3)$=6.6;
- brand extension	53%	52%	52%	p=.08
- company name	19%	17%	18%	
- generic / no brand	1%	4%	2%	
Distribution channels				
- current channels	77%	70%	73%	$\chi^2(2)$=3.0;
- new channels	1%	1%	1%	p=.23
- both current / new	22%	29%	26%	
Distribution expenditures				
- higher	**15%**	9%	12%	$\chi^2(2)$=9.4;
- about the same	78%	78%	78%	p<.01
- lower	7%	**13%**	10%	
Price level				
- higher	**18%**	10%	14%	$\chi^2(2)$=6.8;
- about the same	48%	49%	48%	p<.05
- lower	34%	41%	37%	
Pricing strategy				
- skimming	18%	15%	17%	$\chi^2(2)$=1.3;
- penetration	52%	50%	51%	p=.51
- other	30%	35%	32%	
Promotion expenditures				
- higher	19%	16%	18%	$\chi^2(2)$=1.9;
- about the same	57%	56%	57%	p=.39
- lower	23%	28%	26%	
Communication channels				
- salesforce promotion	89%	91%	90%	$\chi^2(1)$=0.5; p=.46
- **trade promotion**	77%	**90%**	83%	$\chi^2(1)$=16.8; p<.0001
- **customer promotion**	**91%**	55%	74%	$\chi^2(1)$=81.9; p<.0001
- personal selling	42%	40%	41%	$\chi^2(1)$=0.3; p=.60
- **direct marketing**	33%	**46%**	39%	$\chi^2(1)$=9.2; p<.01
- print-advertising	31%	26%	29%	$\chi^2(1)$=1.8; p=.18
- **public relations**	20%	**29%**	24%	$\chi^2(1)$=5.5; p<.05
- trade shows	17%	14%	15%	$\chi^2(1)$=0.6; p=.42
- **tv-advertising**	**15%**	1%	8%	$\chi^2(1)$=31.8; p<.0001
- **radio-advertising**	**9%**	2%	6%	$\chi^2(1)$=10.9; p<.001

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 7E: Strategic launch decisions for consumer and industrial products (U.S. introductions)

	Consumer Products N = 91*	Industrial Products N = 197*	Total Sample N = 288*	Test-statistic
Product innovativeness				
- more innovative	61%	63%	63%	$\chi^2(2)=0.2$;
- equally innovative	32%	30%	31%	$p=.92$
- less innovative	7%	6%	6%	
NPD cycle time				
- less than 6 months	10%	5%	6%	$\chi^2(3)=9.6$;
- 6 months - 1 year	**35%**	23%	26%	$p<.05$
- 1 - 3 years	38%	47%	44%	
- more than 3 years	17%	26%	23%	
Product newness				
- completely new	25%	26%	25%	$\chi^2(5)=7.7$;
- new product line	21%	19%	20%	$p=.17$
- addition to line	37%	26%	29%	
- improvement	13%	22%	19%	
- repositioning	5%	5%	5%	
- lower cost	0%	3%	2%	
Perception customers				
- incremental improvement	**48%**	37%	40%	$\chi^2(2)=10.5$;
- performance improvement	34%	**54%**	48%	$p<.01$
- never seen before	**18%**	9%	12%	
Targeting strategy				
- niche	33%	37%	36%	$\chi^2(2)=5.1$;
- selective	29%	38%	35%	$p=.08$
- mass-market	38%	25%	29%	
Market growth rate				
- less than 0%	0%	6%	4%	$\chi^2(3)=7.5$;
- 0% - 5%	46%	43%	44%	$p=.06$
- 5% - 10%	30%	20%	23%	
- more than 10%	25%	31%	29%	
Stage of the PLC				
- introduction	32%	29%	30%	$\chi^2(3)=4.2$;
- growth	34%	30%	31%	$p=.24$
- maturity	35%	37%	37%	
- decline	0%	4%	3%	
Market competitiveness				
- not one competitor	29%	35%	33%	$\chi^2(2)=1.4$;
- 1 to 3 competitors	44%	37%	39%	$p=.50$
- ≥ 4 competitors	28%	27%	27%	
Timing strategy				
- technological innovator	51%	64%	59%	$\chi^2(2)=4.9$;
- fast imitator	41%	28%	32%	$p=.09$
- cost reducer	9%	9%	9%	
Driver of NPD				
- completely market	**7%**	2%	3%	$\chi^2(3)=12.8$;
- mainly market	**39%**	24%	29%	$p<.01$
- mix market/technology	31%	**43%**	39%	
- mainly technology	24%	32%	29%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 7E: Strategic launch decisions for consumer and industrial products (U.S. introductions) (continued)

	Consumer Products N = 91*	Industrial Products N = 197*	Total Sample N = 288*	Test-statistic
Objectives				
- expand product range	61%	55%	57%	$\chi^2(1)=0.9; p=.36$
- increase penetration	52%	43%	46%	$\chi^2(1)=2.0; p=.15$
- utilize new technology	37%	45%	43%	$\chi^2(1)=1.6; p=.20$
- foothold in new market	28%	33%	32%	$\chi^2(1)=0.7; p=.41$
- utilize existing market	33%	32%	32%	$\chi^2(1)=0.0; p=.85$
- barriers for competition	24%	29%	28%	$\chi^2(1)=1.0; p=.31$
- increase company's image	32%	21%	25%	$\chi^2(1)=3.4; p=.06$
- emerging market segment	19%	15%	16%	$\chi^2(1)=0.7; p=.41$
- lower costs possible	9%	16%	14%	$\chi^2(1)=2.7; p=.10$
- utilize excess capacity	11%	9%	10%	$\chi^2(1)=0.3; p=.58$
- extend seasonal cycle	**8%**	**2%**	**4%**	$\chi^2(1)=5.6; p<.05$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 7F: Tactical launch decisions for consumer and industrial products (U.S. introductions)

	Consumer Products N = 91*	Industrial Products N = 197*	Total Sample N = 288*	Test-statistic
Breadth of assortment				
- broader	40%	46%	44%	$\chi^2(2)=10.6$;
- equally broad	**44%**	26%	31%	$p<.01$
- smaller	16%	**28%**	25%	
Branding strategy				
- new brand name	43%	36%	38%	$\chi^2(3)=5.1$;
- brand extension	24%	18%	20%	$p=.17$
- company name	31%	40%	37%	
- generic / no brand	2%	6%	5%	
Distribution channels				
- current channels	84%	80%	81%	$\chi^2(2)=1.4$;
- new channels	6%	10%	8%	$p=.50$
- both current / new	10%	11%	11%	
Distribution expenditures				
- higher	18%	27%	24%	$\chi^2(2)=2.4$;
- about the same	61%	53%	55%	$p=.30$
- lower	21%	21%	21%	
Price level				
- higher	47%	54%	52%	$\chi^2(2)=6.1$;
- about the same	**44%**	29%	34%	$p<.05$
- lower	9%	17%	15%	
Pricing strategy				
- skimming	45%	54%	51%	$\chi^2(2)=6.4$;
- penetration	29%	32%	31%	$p<.05$
- other	**26%**	14%	18%	
Promotion expenditures				
- higher	23%	27%	26%	$\chi^2(2)=1.3$;
- about the same	37%	40%	39%	$p=.51$
- lower	40%	33%	35%	
Communication channels				
- salesforce promotion	74%	81%	79%	$\chi^2(1)=2.0; p=.16$
- **trade promotion**	**81%**	60%	66%	$\chi^2(1)=11.3; p<.001$
- **personal selling**	41%	**62%**	56%	$\chi^2(1)=10.4; p<.01$
- print-advertising	51%	42%	45%	$\chi^2(1)=1.8; p=.18$
- **customer promotion**	**64%**	33%	43%	$\chi^2(1)=23.7; p<.0001$
- public relations	44%	37%	39%	$\chi^2(1)=1.2; p=.28$
- **direct marketing**	23%	**41%**	36%	$\chi^2(1)=8.6; p<.01$
- **tv-advertising**	**32%**	1%	11%	$\chi^2(1)=61.4; p<.0001$
- trade shows	7%	11%	10%	$\chi^2(1)=1.3; p=.26$
- **radio-advertising**	**12%**	2%	5%	$\chi^2(1)=13.6; p<.001$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 7G: Factor structure of the new product performance measures for the consumer products (N=442)*

Indicators	Factor Loadings	Communality
Factor 1: Market Acceptance (λ=4.3, 48.2%)		
Unit sales goals	.91	.95
Revenue growth goals	.90	.88
Revenue goals	.90	.89
Market share goals	.80	.66
Factor 2: Financial Performance (λ=2.2, 24.5%)		
IRR/ROI goals	.92	.94
Break even time	.87	.79
Attain margin goals	.83	.70
Factor 3: Product Performance (λ=1.1, 12.3%)		
Launched on time	.92	.93
Speed to market	.90	.92

* After principal components analysis and varimax rotation. Eigenvalue and percentage of variance explained appear after the factor name. All analyses were done on a partial correlation matrix controlling for the outcome status of the introduction: successful or unsuccessful. The resultant solution was purified by deleting doubly loading variables (> 0.30 on more than one factor) and variables with low communalities (< 0.50).

Appendix 7H: Factor structure of the new product performance measures for the industrial products (N=576)*

Indicators	Factor Loadings	Communality
Factor 1: Market Acceptance (λ=3.4, 42.3%)		
Revenue growth goals	.96	.93
Unit sales goals	.95	.94
Revenue goals	.88	.84
Factor 2: Product Performance (λ=2.0, 25.1%)		
Launched on time	.94	.92
Speed to market	.93	.88
Customer acceptance	-.73	.68
Factor 3: Financial Performance (λ=1.5, 18.3%)		
Attain margin goals	.85	.88
IRR/ROI goals	.81	.79

*   After principal components analysis and varimax rotation. Eigenvalue and percentage of variance explained appear after the factor name. All analyses were done on a partial correlation matrix controlling for the outcome status of the introduction: successful or unsuccessful. The resultant solution was purified by deleting doubly loading variables (> 0.30 on more than one factor) and variables with low communalities (< 0.50).

Appendix 8A: Strategic launch decisions and country of introduction (consumer products)

	The Nether-lands N=91	U.S.A. N=91	U.K. N=260	Total N=442	Test-statistic
Product innovativeness					
- more innovative	**56%**	**61%**	24%	38%	$\chi^2(4)=54.3$;
- equally innovative	40%	32%	**70%**	56%	$p<.0001$
- less innovative	5%	7%	6%	6%	
NPD cycle time					
- less than 6 months	**16%**	10%	3%	7%	$\chi^2(6)=62.8$;
- 6 months - 1 year	**42%**	**35%**	15%	24%	$p<.0001$
- 1 - 3 years	32%	38%	**58%**	49%	
- more than 3 years	10%	17%	**25%**	20%	
Product newness					
- completely new	**20%**	**25%**	3%	11%	$\chi^2(10)=52.6$;
- new product line	34%	21%	**42%**	36%	$p<.0001$
- addition to line	30%	37%	40%	37%	
- improvement	9%	13%	12%	12%	
- repositioning	6%	5%	2%	4%	
- lower cost	1%	0%	1%	1%	
Perception customers					
- incremental improvement	46%	48%	46%	46%	$\chi^2(4)=22.2$;
- performance improvement	41%	34%	**50%**	45%	$p<.001$
- never seen before	13%	**18%**	4%	9%	
Targeting strategy					
- niche	12%	**33%**	19%	20%	$\chi^2(4)=23.8$;
- selective	44%	29%	**53%**	46%	$p<.0001$
- mass-market	**44%**	38%	29%	34%	
Market growth rate					
- less than 0%	**18%**	0%	3%	5%	$\chi^2(6)=60.1$;
- 0% - 5%	51%	46%	42%	44%	$p<.0001$
- 5% - 10%	15%	30%	**46%**	37%	
- more than 10%	17%	**25%**	10%	14%	
Stage of the PLC					
- introduction	**20%**	**32%**	3%	12%	$\chi^2(6)=64.5$;
- growth	32%	34%	**44%**	39%	$p<.0001$
- maturity	42%	35%	**50%**	45%	
- decline	7%	0%	4%	3%	
Market competitiveness					
- not one competitor	20%	**29%**	7%	14%	$\chi^2(4)=31.3$;
- 1 to 3 competitors	35%	44%	48%	44%	$p<.0001$
- ≥ 4 competitors	45%	28%	45%	42%	
Timing strategy					
- technological innovator	41%	**51%**	34%	39%	$\chi^2(4)=14.8$;
- fast imitator	48%	41%	**61%**	54%	$p<.01$
- cost reducer	11%	9%	5%	7%	
Driver of NPD					
- completely market	3%	7%	5%	5%	$\chi^2(6)=46.5$;
- mainly market	42%	39%	**68%**	57%	$p<.0001$
- mix market/technology	**44%**	31%	19%	26%	
- mainly technology	11%	**24%**	9%	12%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

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Appendix 8A: Strategic launch decisions and country of introduction (consumer products) (continued)

	The Nether-lands N=91	U.S.A. N=91	U.K. N=260	Total N=442	Test-statistic
Objectives					
- **expand product range**	67%	61%	**91%**	80%	$\chi^2_2(2)=48.3$; $p<.0001$
- **increase penetration**	56%	52%	**78%**	68%	$\chi^2_2(2)=27.8$; $p<.0001$
- **utilize existing market**	44%	33%	**72%**	58%	$\chi^2_2(2)=52.9$; $p<.0001$
- **barriers for competition**	24%	24%	**68%**	50%	$\chi^2_2(2)=83.6$; $p<.0001$
- increase company's image	37%	32%	28%	31%	$\chi^2_2(2)=2.6$; $p=.28$
- **lower costs possible**	3%	9%	**38%**	25%	$\chi^2_2(2)=56.9$; $p<.0001$
- **utilize new technology**	20%	**37%**	20%	24%	$\chi^2_2(2)=11.0$; $p<.01$
- **utilize excess capacity**	7%	11%	**28%**	20%	$\chi^2_2(2)=24.3$; $p<.0001$
- **foothold in new market**	26%	**28%**	14%	19%	$\chi^2_2(2)=12.7$; $p<.01$
- **emerging market segment**	**47%**	19%	9%	19%	$\chi^2_2(2)=64.1$; $p<.0001$
- extend seasonal cycle	6%	8%	7%	7%	$\chi(2)=0.4$; $p=.82$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 8B: Tactical launch decisions and country of introduction (consumer products)

	The Nether-lands N=91	U.S.A. N=91	U.K. N=260	Total N=442	Test-statistic
Breadth of assortment					
- broader	**51%**	**40%**	14%	27%	$\chi^2(4)=56.8$;
- equally broad	29%	44%	**63%**	53%	$p<.0001$
- smaller	20%	16%	23%	21%	
Branding strategy					
- new brand name	24%	**43%**	27%	30%	$\chi^2(6)=37.4$;
- brand extension	33%	24%	**53%**	43%	$p<.0001$
- company name	**40%**	31%	19%	26%	
- generic / no brand	3%	2%	1%	2%	
Distribution channels					
- current channels	87%	84%	77%	80%	$\chi^2(4)=15.5$;
- new channels	3%	**6%**	1%	3%	$p<.01$
- both current / new	10%	10%	**22%**	17%	
Distribution expenditures					
- higher	21%	18%	15%	17%	$\chi^2(4)=24.3$;
- about the same	57%	61%	**78%**	78%	$p<.0001$
- lower	**21%**	**21%**	7%	7%	
Price level					
- higher	**38%**	**47%**	18%	27%	$\chi^2(4)=35.9$;
- about the same	37%	44%	48%	45%	$p<.0001$
- lower	25%	9%	**34%**	28%	
Pricing strategy					
- skimming	32%	**45%**	18%	26%	$\chi^2(4)=29.8$;
- penetration	37%	29%	**52%**	45%	$p<.0001$
- other	31%	26%	30%	30%	
Promotion expenditures					
- higher	**39%**	23%	19%	24%	$\chi^2(4)=27.7$;
- about the same	33%	37%	**57%**	49%	$p<.0001$
- lower	28%	**40%**	23%	28%	
Communication channels					
- **salesforce promotion**	44%	74%	**89%**	77%	$\chi^2(2)=76.0$; $p<.0001$
- trade promotion	68%	81%	77%	76%	$\chi^2(2)=4.0$; $p=.14$
- **customer promotion**	45%	64%	**91%**	76%	$\chi^2(2)=85.4$; $p<.0001$
- personal selling	45%	41%	42%	43%	$\chi^2(2)=0.3$; $p=.87$
- **print-advertising**	43%	**51%**	31%	37%	$\chi^2(2)=11.9$; $p<.01$
- **public relations**	**42%**	**44%**	20%	29%	$\chi^2(2)=26.4$; $p<.0001$
- **direct marketing**	15%	23%	**33%**	27%	$\chi^2(2)=11.2$; $p<.01$
- **tv-advertising**	24%	**32%**	15%	20%	$\chi^2(2)=12.9$; $p<.01$
- trade shows	11%	7%	17%	14%	$\chi^2(2)=5.8$; $p=.06$
- radio-advertising	12%	12%	9%	10%	$\chi^2(2)=0.8$; $p=.68$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

Appendix 8C: Strategic launch decisions and country of introduction (industrial products)

	The Nether-lands N=148	U.S.A. N=197	U.K. N=231	Total N=576	Test-statistic
Product innovativeness					
- more innovative	56%	**63%**	33%	49%	$\chi^2(4)=43.7$;
- equally innovative	39%	30%	**53%**	42%	$p<.0001$
- less innovative	6%	6%	**14%**	9%	
NPD cycle time					
- less than 6 months	**18%**	5%	1%	7%	$\chi^2(6)=62.0$;
- 6 months - 1 year	**36%**	23%	26%	27%	$p<.0001$
- 1 - 3 years	39%	47%	52%	47%	
- more than 3 years	7%	**26%**	21%	19%	
Product newness					
- completely new	18%	**26%**	8%	16%	$\chi^2(10)=41.3$;
- new product line	32%	19%	28%	26%	$p<.0001$
- addition to line	26%	26%	**39%**	31%	
- improvement	20%	22%	21%	21%	
- repositioning	3%	**5%**	0%	3%	
- lower cost	2%	3%	3%	3%	
Perception customers					
- incremental improvement	21%	**37%**	19%	26%	$\chi^2(4)=26.3$;
- performance improvement	**70%**	54%	65%	63%	$p<.0001$
- never seen before	9%	9%	**17%**	12%	
Targeting strategy					
- niche	19%	**37%**	28%	29%	$\chi^2(4)=15.4$;
- selective	52%	38%	49%	46%	$p<.01$
- mass-market	29%	25%	23%	25%	
Market growth rate					
- less than 0%	**16%**	6%	3%	7%	$\chi^2(6)=55.9$;
- 0% - 5%	42%	43%	43%	43%	$p<.0001$
- 5% - 10%	20%	20%	**40%**	29%	
- more than 10%	23%	**31%**	14%	22%	
Stage of the PLC					
- introduction	**25%**	**29%**	4%	18%	$\chi^2(6)=86.8$;
- growth	**47%**	30%	35%	36%	$p<.0001$
- maturity	24%	37%	**61%**	43%	
- decline	3%	4%	0%	3%	
Market competitiveness					
- not one competitor	15%	**35%**	0%	16%	$\chi^2(4)=103.7$;
- 1 to 3 competitors	37%	37%	**49%**	42%	$p<.0001$
- ≥ 4 competitors	48%	27%	**52%**	42%	
Timing strategy					
- technological innovator	44%	**64%**	40%	49%	$\chi^2(4)=45.8$;
- fast imitator	47%	28%	**58%**	45%	$p<.0001$
- cost reducer	9%	9%	2%	6%	
Driver of NPD					
- completely market	6%	2%	7%	5%	$\chi^2(6)=121.9$;
- mainly market	40%	24%	**67%**	45%	$p<.0001$
- mix market/technology	40%	**43%**	23%	34%	
- mainly technology	14%	**32%**	3%	16%	

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation.

Appendix 8C: Strategic launch decisions and country of introduction (industrial products) (continued)

	The Nether-lands	*U.S.A.*	*U.K.*	*Total*	*Test-statistic*
	N=148	N=197	N=231	N=576	
Objectives					
- **expand product range**	67%	55%	**87%**	75%	$\chi^2_2(2)=53.1; p<.0001$
- **increase penetration**	53%	43%	**87%**	63%	$\chi_2(2)=96.7; p<.0001$
- **utilize existing market**	41%	32%	**75%**	52%	$\chi_2(2)=89.3; p<.0001$
- **utilize new technology**	32%	**45%**	38%	39%	$\chi_2(2)=6.0; p<.05$
- **barriers for competition**	26%	29%	**49%**	37%	$\chi_2(2)=26.2; p<.0001$
- **lower costs possible**	18%	16%	**50%**	30%	$\chi_2(2)=71.7; p<.0001$
- **foothold in new market**	28%	**33%**	19%	26%	$\chi_2(2)=11.0; p<.01$
- increase company's image	23%	21%	27%	24%	$\chi_2(2)=1.9; p=.39$
- **emerging market segment**	**30%**	15%	11%	17%	$\chi_2(2)=23.5; p<.0001$
- utilize excess capacity	8%	9%	13%	10%	$\chi_2(2)=2.3; p=.31$
- **extend seasonal cycle**	4%	2%	**7%**	5%	$\chi(2)=6.9; p<.05$

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *objectives* refer to the percentage of all products which were launched with a specific objective. Hence, the percentages for the *objectives* do not add up to 100%.

Appendix 8D: Tactical launch decisions and country of introduction (industrial products)

	The Nether-lands	*U.S.A.*	*U.K.*	*Total*	*Test-statistic*
	N=148	N=197	N=231	N=576	
Breadth of assortment					
- broader	**45%**	**46%**	12%	32%	$\chi^2(4)$=89.1;
- equally broad	34%	26%	**64%**	43%	p<.0001
- smaller	21%	28%	24%	25%	
Branding strategy					
- new brand name	34%	36%	26%	31%	$\chi^2(6)$=91.8;
- brand extension	13%	18%	**52%**	31%	p<.0001
- company name	**43%**	**40%**	17%	32%	
- generic / no brand	10%	6%	4%	6%	
Distribution channels					
- current channels	75%	**80%**	70%	74%	$\chi^2(4)$=40.3;
- new channels	**12%**	**10%**	1%	7%	p<.0001
- both current / new	14%	11%	**29%**	19%	
Distribution expenditures					
- higher	15%	**27%**	9%	16%	$\chi^2(4)$=39.4;
- about the same	58%	53%	**78%**	65%	p<.0001
- lower	**28%**	21%	13%	19%	
Price level					
- higher	**43%**	**54%**	10%	32%	$\chi^2(4)$=93.1;
- about the same	36%	29%	**49%**	39%	p<.0001
- lower	22%	17%	**41%**	29%	
Pricing strategy					
- skimming	36%	**54%**	15%	34%	$\chi^2(4)$=73.2;
- penetration	39%	32%	**50%**	41%	p<.0001
- other	25%	14%	**34%**	25%	
Promotion expenditures					
- higher	**34%**	27%	16%	24%	$\chi^2(4)$=25.9;
- about the same	33%	40%	**56%**	45%	p<.0001
- lower	33%	33%	28%	31%	
Communication channels					
- salesforce promotion	53%	81%	**91%**	78%	$\chi^2(2)$=77.5; p<.0001
- trade promotion	35%	60%	**90%**	66%	$\chi^2(2)$=129.2; p<.0001
- personal selling	**72%**	**62%**	40%	56%	$\chi^2(2)$=42.7; p<.0001
- direct marketing	43%	41%	46%	44%	$\chi^2(2)$=1.2; p=.56
- customer promotion	6%	33%	**55%**	35%	$\chi^2(2)$=94.3; p<.0001
- public relations	**42%**	37%	29%	35%	$\chi^2(2)$=6.9; p<.05
- print-advertising	24%	**42%**	26%	31%	$\chi^2(2)$=17.3; p<.001
- trade shows	10%	11%	14%	12%	$\chi^2(2)$=1.8; p=.41
- radio-advertising	1%	2%	2%	2%	$\chi^2(2)$=0.4; p=.81
- tv-advertising	1%	1%	1%	1%	$\chi^2(2)$=0.1; p=.94

Note: True *N* per test varies because of missing data; entries in bold indicate an adjusted residual higher than +2 after crosstabulation. The entries for the *communication channels* refer to the percentage of all products which used that specific channel. Hence, the percentages for the *communication channels* do not add up to 100%.

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