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Success Factors in Developing New Professional Services

Emmanuel Ragot

A Thesis

in

The Faculty of Commerce

and

Administration

**Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Science at
Concordia University
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Abstract

Success Factors in Developing New Professional Services

Emmanuel Ragot

Professional services have been a high growth sector of the Canadian economy for the past ten years. However, a high failure rate was observed for this type of services. Surprisingly, very little research has been done to understand what causes new service success and failure in this part of the service industry.

Previous studies on new product development have mainly dealt with physical goods and with the dimensions influencing their performance. However, only few studies focused on the specific issue of understanding new service development. Studies done on services examined the characteristics that distinguish services from manufactured products. Until recently, no major empirical study had addressed the problems linked to new service development and the causes of new service success and failure.

The present research proposes to examine how professional service companies develop new ventures and which dimensions are related to new service performance. Professional services are defined as services which are qualified, advisory, and problem solving (Gummesson 1981). Examples of such services are marketing and engineering consultants.

To carry out the project, a sub-sample of a database created for a previous study on industrial services (de Brentani 1989) was analyzed. Factor and reliability analyses helped in finding 15 descriptive dimensions of new professional services. Results of a multiple regression analysis show that seven of these dimensions are significantly related to new service performance.

This thesis is based on data gathered by Dr. U. de Brentani for a larger study on "Success and Failure in New Industrial Services", funded by the Social Science and Humanities Research Council and by Shell Canada. The author gratefully acknowledges the SSHRC Grant No. RO20-1905.

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Pour m'avoir guidé et protégé, merci aux anges de l'inspiration et du marketing.

«Il n'y a qu'un seul théâtre. Une seule pièce jouée sur la même scène par des milliards d'individus apparemment séparés. À travers des milliards de circonstances différentes.

Une seule grande aventure.

Et des histoires.

Des histoires de larmes ou de rires. De ruptures ou de retrouvailles. Des trains qui roulent.

Des coeurs qui battent. Des soupirs et des inquiétudes. Des histoires d'enfants qui grandissent.

Des histoires drôles. Celles qu'on raconte ou qu'on oublie. Celles des gens dans les rues, dans les maisons, dans les villes. Des histoires extraordinaires, tristes ou banales. De frères, de soeurs. Maris et femmes. Des mariages et des départs.

Des milliards d'histoires. En fait, qui ne sont qu'une. Celle qui est racontée ici n'est qu'un exemple. Mais peut-être contient-elle aussi toutes les autres. Car toutes les histoires sont des histoires d'amour.»

Michel Jonasz.

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INTRODUCTION

Like many other Western societies, Canada has moved from an economy based on manufacturing to an economy predominantly based on services. The growth of the service industry was particularly rapid during the 1980's with a considerable increase in the number of service suppliers competing against each other in various sectors (Statistics Canada 1988, 1992). Recent deregulations in Canada, and increasing globalization have provided more choice to the consumer with the marketplace becoming bigger and more international. Therefore, service organizations are now finding themselves competing against foreign imports and foreign-based organizations on their own territory. They also have to deal with their usual domestic competitors. Furthermore, deregulation and reduced funding to traditionally non profit-making service organizations (e.g., public transport, utility services, health services), is also forcing non-profit service firms to compete against commercial organizations. Eventually, technology advances (e.g., computers, information highway) provided service companies with opportunities to develop new products that could better match their clientele needs and wants.

Responding to these new market opportunities with new products or services has consequently become vital for many firms. Their growth and profitability relies mainly on developing successful new services (de Brentani 1993). However, because of intense competition, companies have to develop new services quickly if they want to remain competitive. This often increases the uncertainty and the risk associated with new service development, such as financial risk. It is therefore essential for managers to know "the types of new service projects that are typically associated with success and failure. Also

important are the essential combinations of factors that impact on new service performance" (de Brentani 1993, p1).

Very little research has focused on new product development in industrial services. Until recently, researchers considered services as a part of the "goods and services" mix. Some studies were conducted to define which dimensions differentiate services from manufactured goods (Berry 1980; Shostack 1977). Although previous research mainly focused on specific industries, results helped in creating new service development models (Scheuing and Johnson 1989). Only one major empirical study looked at a broad sample of new service projects to describe what causes success and failure in new industrial services (de Brentani 1989).

The objective of my study is to define which dimensions are responsible for new service success in the professional services industry. A professional service can be defined as any service a company purchases to get help on or to perform a specific job necessary to the production process of this company. Advertising agencies, marketing research consultants, and accountants are examples of what is meant by "professional service" in this report. The choice of this service sector was made because of personal interest, first, but also because this part of the service industry had a very high growth, but also a very high new service failure rate, over the past ten years (Statistics Canada 1992). It seems therefore necessary to determine the factors influencing new professional service outcome.

The goal of this study is exploratory. It will only examine cases from a few types of professional services: computer and systems companies, marketing and advertising firms, management consultants, and accounting services for businesses.

This paper will start by discussing the models and processes utilized by companies who develop new manufactured goods. This part is important to the comprehension of the topic because most of the literature on new service development comes from the manufactured products literature. Then, a summary of the factors and variables that can drive an industrial product to market success will be provided.

The second part of this work will deal with industrial services. First, the existing literature dealing with the differences between manufactured products and services will be reviewed. Then, previous research on new service development and on what contributes to a successful new service will be examined. For the purpose of this paper, characteristics of professional services will be looked at as well as how these services differ from other industrial services.

The third part of this paper will begin with a description of the database. Research methodology and research framework used will then be described, followed by the results and their interpretation.

NEW PRODUCT DEVELOPMENT FOR MANUFACTURED GOODS

1- Importance of new product development.

1.1- Financial issues.

Success in new product development (NPD) is a critical management issue. Research has shown that new product introductions are vital to most manufacturing firm's growth and prosperity. Companies use new product development not only to keep their current product portfolio competitive and healthy but also to achieve a long-term, sustainable competitive advantage (Zirger and Maidique, 1990). In a recent study, Cooper (1993) found that new products launched during the past five years account for almost 40% of company sales, and this figure is expected to grow to 52% by 1995. Similar evidence was found for contributions of new products to company profits. From a level of almost 35% today, new products are expected to account for 46% of company profits by 1995. It is clear from these findings that firms must try to increase the pace of new products introductions to market. The average number of new products launched per company during the 1985-1989 period was 37.5. This number is expected to increase to 45.3 for the 1990-1995 period, thus increasing R&D expenses, but also gross revenues and market shares.

Product innovation is also important for corporate well-being because financial markets use a firm's "degree of innovativeness" as a key criterion for predicting the investment value of a company. This means that through innovativeness, a firm can increase its total value, reduce its cost of capital, and attract investors (Cooper 1993).

1.2- High failure rate.

Notwithstanding the importance of innovation, studies have shown that, on average, 60 to 65% of new products are successful at market launch (Crawford 1979; Page 1993). However, these figures are very optimistic and do not show the true failure rate. They do not include the rate of attrition, which is the number of products that failed at one point or another in the development process. One study revealed that for every seven new product ideas, about four enter development, 1.5 are launched, and only 1 succeeds (Booz, Allen and Hamilton 1982). A direct result of this rate of attrition and failure is that many resources (financial, human, time...) are devoted to new products that never return any revenue. Another consequence of this high failure rate is that any successful new product must create enough revenues to cover not only its own development costs but also those of the six other products.

1.3- New product development issues.

Because of the high failure and attrition rate, companies waste some of the resources they could use for other projects. Therefore, understanding the factors that drive new product outcomes and managing the development process can help a company to better focus valuable R&D resources (Zirger and Maidique, 1990). Saved resources could then be used to market the new product more efficiently and effectively, to conduct more in-depth market-testing, or to start developing another new product.

Companies can save useful assets by adopting a new product game plan. A new product game plan ensures a company to execute the different product development tasks

properly, to have a sharper focus on resources, and to have a strong market orientation. Johnes and Snelson (1990) showed that successful businesses are more likely to have and to follow an explicit product development strategy.

The game plan also helps companies to better manage the development period of the product. It gives new product managers the opportunity to make a trade-off between a short development time and the will to reduce the failure rate. It also ensures adequate levels of participation of all concerned functions (e.g., R&D, Marketing, Production...) during product development. Eventually, the game plan will ensure that the early stages of new product development are carried out properly before the project is allowed to proceed (Cooper 1993).

If getting better at carrying out the innovation process is so imperative, a key question is: which type of product development process should a company use?

2- New product development processes.

2.1 Definition.

Through case studies of how companies develop new products, some researchers identified new product development processes and tried to generalize those specific processes into NPD models (Booz, Allen and Hamilton 1982; Cooper 1979). One role of these models is to help companies to improve their proficiency in new product development, so they do not waste scarce resources. Most of these NPD processes comprise stage-gate systems that new products have to follow to be successful.

A stage-gate process is a conceptual and operational model for moving a new product from idea to market launch (Cooper, 1990). A stage corresponds to a phase of the process where one part of the development work is done. A gate is similar to a quality control checkpoint where the process manager certifies that the project meets quality requirements to move to the next stage. The company using a stage-gate model has to identify all of the activities that must be performed in bringing new product ideas to the market place.

2.2 A typical NPD process.

The best known new product development model was elaborated by Booz, Allen and Hamilton (1982). This model comprises seven stages and covers the whole product development process, from objectives setting to commercialization (see figure 1). Although no "gates" were formally included in the model, Booz, Allen and Hamilton (1982) assume that the process is controlled at the end of each stage.

The typical phases of a new product development process are as follows:

- + objective setting: determination of the product-related objectives
- + exploration: generation of product ideas
- + idea screening: screening of product ideas based on objectives set in stage one.
- + business analysis: market research, product evaluation on financial criteria.
- + product development: prototype development, testing and refining.
- + product testing: market test of the final version of the product.
- + commercialization: full market launch of the product, performance evaluation.

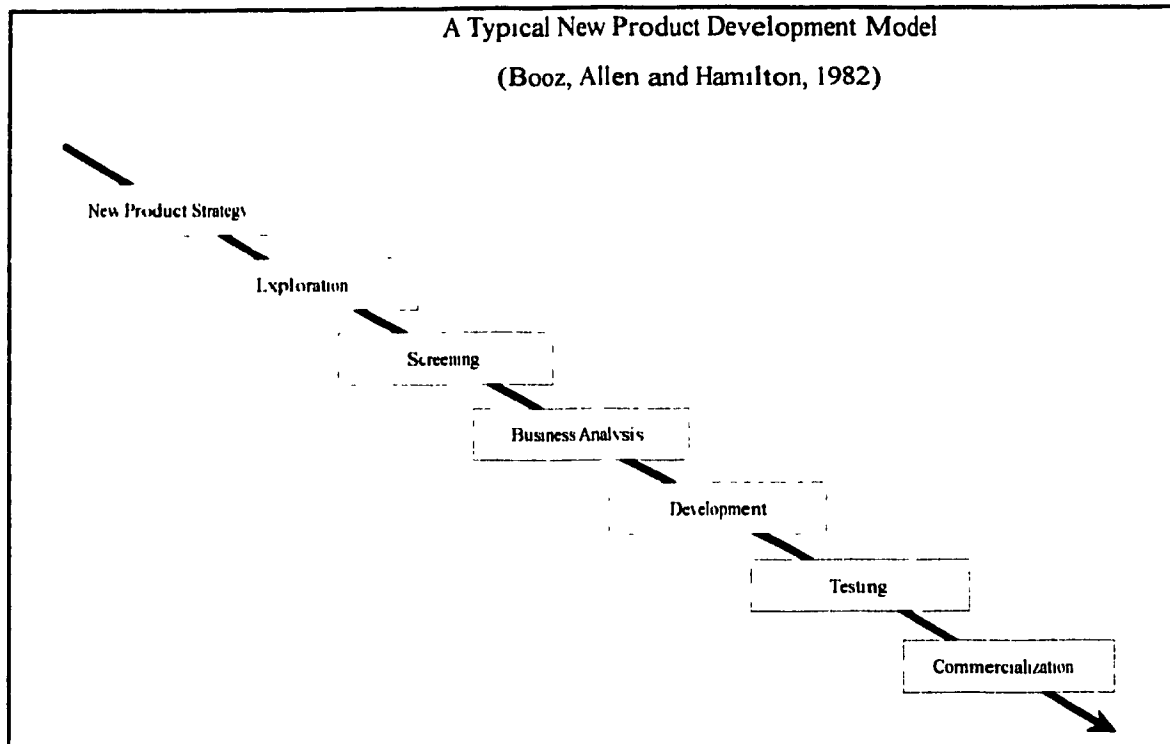


Figure 1: A Typical New Product Development Model

2.3 Reasons to have a NPD process.

Booz, Allen and Hamilton (1982) believe that the companies most likely to succeed in the development and introduction of new products will implement a company-specific stage-gate system. This system will be driven not only by corporate objectives and strategies, but also by a well-defined new product strategy.

Cooper (1993) reports that implementing a stage-gate system improves product success rates, customer satisfaction, and also helps managers in meeting time, quality and cost objectives. A stage-gate system forces the company to follow certain steps in a specific order. This constraint prevents managers from skipping a step or from going through it rather quickly. This is an advantage, especially during the up-front activities of new

product development. For example, during the initial screening phase, every idea will be evaluated against specific criteria to make sure the product will meet customers' needs if it is commercialized. Skipping this step may result in bad market orientation and in probable product failure.

Companies using a formal new product process have also been shown to get to the market faster and to achieve higher profits. This is because a stage-gate system usually improves teamwork, thus reducing development time and decreasing a significant amount of recycling and rework on the project. Due to the gates, or quality checkpoints, such a system also detects possible failure projects early, and prevents companies from spending money on projects that never reach the production phase (Cooper 1993; Page 1993; Moore 1987)..

Cooper (1983, p6) goes further, encouraging managers to use the formal new product process as "a skeleton around which each project manager can build his/her own PERT or Critical Path plan specific to any one project". This can be done easily since the goal of a NPD model is to help managers in organizing and controlling the various activities involved in the development of a new product.

Which steps are involved in a new product process? Many studies took a look at stage-gate systems. Even if they did not come up with the same number of steps, or with similar labels, they reached a consensus on which phases should be involved in developing new products. A summary of the main studies is shown in table 1. These studies will be used as a basis for discussion of the different stages involved in new product development.

2.4- The objective setting stage.

Although setting objectives is not a formal stage in each new product development model, companies need to deal with this before undertaking new product development. According to Wind (1982, p155), "The first step in the product planning process is the determination of the relevant product-related objectives. The objectives provide guidelines for the firm's decision on its current products as well as its new product development". In fact, firms should set new product objectives in a measurable way so the results of their innovation efforts can be more easily compared. Moreover, objectives will give the new product team a sense of direction and purpose, and can be used as criteria for decision making in later stages of development (e.g., idea screening phase) (Cooper 1993). Contribution to annual sales, contribution to profits, percentage of sales spent on research, minimum acceptable financial returns for new product projects, market share, and the number of new products to be introduced are a few examples of how objectives can be operationalized (Wind 1982, Cooper 1993).

2.5- The idea generation stage.

A second step articulated in most new product process models, is the generation of new product ideas. Companies need to formalize this step so that product ideas are not the result of chance. Idea generation should be the responsibility of the entire company. Cooper (1993) suggests that an idea generation system be implemented, and that one person takes the responsibility of stimulating, generating and collecting new product ideas.

Table 1: Five New Product Development Models

Booz, Allen, Hamilton (1982)	Cooper (1993)	Bingham and Quigley (1989)	Urban and Hauser (1993)	Wind (1982)
Product objectives				Objectives
Exploration	Idea	Idea generation	Opportunity Identification	Generation of Ideas
Screening	Preliminary Assessment	Idea Screening		Idea Screening
		Conceptual development and testing		Product Development and Evaluation
Business analysis	Detailed Investigation	Business Analysis		Product/Marketing Strategy
Development	Development	Product development	Design	System for Continuous Evaluation of Product Performance
Testing	Testing and Validation	Test market	Testing	
Commercialization	Full production and market launch	Product introduction	Introduction	Product Introduction
			Life Cycle management	

New product ideas can be sought either from internal or external sources. Internal sources include top managers, middle managers, employees, new technologies developed by the company, and sales, marketing and planning departments (Urban and Hauser 1993, Cooper 1983). For example, in Myers and Marquis (1969) study, 20% of the successful new technological products had their idea source in the production department. To benefit from their internal resources, companies must provide a favourable environment to idea generation for every employee. Offering incentives, implementing a suggestion scheme, handling ideas promptly, providing guidance and assistance, are a few actions that companies could take to create a positive environment (Cooper 1993).

Externally, ideas may come from trade-shows, specific customer requirements, competitors, research institutions, trade publications, market research, or suppliers (Cooper 1993, Lehtimäki 1991). For industrial companies, a preferred source is frequently customers and prospects. Although these contacts are often informal, they have a strong influence on the new product development program of a company (Cooper 1993). Taking ideas from outside the company is a great opportunity to be market-driven and to respond closely to customer needs. However, this source of ideas is also available to competitors, thus increasing the risk of immediate retaliation. Getting external ideas involves activities such as group discussions with clients, customer panels and surveys, working conjointly with users, attending trade-shows, or reviewing competitive products.

2.6- The screening stage.

The next phase of the typical NPD process is the initial screening of new product ideas. Screening involves tasks such as making the idea a business possibility, collecting facts and opinions about this idea as a business proposition, and appraising the idea for its potential value to the company (Wind 1982).

Using the new product objectives established in stage 1, as well as certain strategic (e.g; pioneering effort, fit with company expertise) and "success/failure" criteria, a first, usually rather rough, attempt is made to assess the likelihood of success or failure of the new product ideas. This is conducted just before funds are allocated specifically to the new product for the first time (Cooper 1990, Moore 1987). The role of screening is to eliminate the obvious misfits and loser projects (Cooper 1988). Because of the lack of information at this stage of the process, the screening decision can only be tentative. It should be seen as a positive decision, allowing the project to move to the next stage, where the project will be evaluated again with more information.

Research has shown that managers frequently screen new product projects against technical and production synergy, overall corporate synergy, expected performance (i.e., financial potential) and competitive advantage of the product (de Brentani 1986). Since these dimensions have a strong positive influence on product success (Cooper and Kleinschmidt 1987, Maidique and Zirger 1984), product ideas meeting these criteria are more likely to succeed in the market place.

2.7- The business analysis stage.

Typically, the next phase of new product development deals with the "Business Analysis". Here, the company attempts to define precisely the new product's target market, and how the product might be positioned with respect to segmentation and competition. Most models recommend that a market study, as well as a detailed financial analysis, should be conducted at this point of product development in order to evaluate market potential, market niches, customer needs, likely product features, competitive products, and likely product costs (Cooper 1983, 1990; Bingham and Quigley 1989).

Business evaluation of a new product can be carried out using four typical approaches: benefit measurement models, economic models, portfolio selection models, and market research models. The benefit measurement model requires "a well-informed respondent or group to provide subjective information regarding the characteristics of the project" (Cooper 1993, p170). The economic model evaluates the project as a conventional investment decision. The goal of the portfolio selection model is to "develop a portfolio of new and existing projects to maximize some objective function (for example, the expected profits), subject to a set of resource constraints" (Cooper 1993, p171). Finally, the market research approach assumes that the only decision criteria for moving the project ahead is expected market acceptance (see Cooper 1993 for a review of these methods).

Another part of the business analysis is to test the product concept. The company has to make sure that the product idea fits customer needs better than existing products before the idea moves to the development stage (Cooper 1993). The product concept can be

made of drawings, models, story boards, dummy brochures, or crude prototypes. Testing the concept implies gathering information from potential customers about the potential product. This step may be carried out by using focus groups or surveys. The company should seek information about customer's interest and liking of the product, intent of purchase, expected price, preference of the product relative to competitive products, and improvements (Cooper 1993).

At the end of the business analysis stage, the company can make a more precise evaluation of the project, in terms of financial interest and market interest. The firm can then decide whether it should allocate development funds to the project, or whether it should kill it before wasting money. If the project meets company's standards, then it has to be moved to the development stage. At this point of time, a Go decision means that the company is ready to commit financial and human resources to successfully develop the new product (Wind 1982; Bingham and Quigley 1989).

2.8- The development stage.

As soon as a Go decision has been made at the previous stage, the project enters its development phase. Knowing the specific customer requirements through the market study conducted before, the company now attempts to translate these requirements into an operational concept, "one that is technically and economically feasible" (Cooper 1988, p.246). Usually, the product is operationalized by a prototype.

Specific tasks in this phase include designing the product, testing the prototype on potential customers, setting and refining the manufacturing process, identifying quality

suppliers, and developing market launch plans (Cooper 1993). During this stage, the process should go back and forth between marketing, manufacturing, test-customers, and lab-experiments, in order to maximize the likelihood of product success (Cooper 1993). A major problem companies face when developing a new product is to translate customer requirements into a physical product. Difficulties often arise because the project team does not pay enough attention to certain customer requests, because the customer had to judge a concept that was not feasible technically, or because customer requirements changed between the first time the concept was evaluated and the time the prototype was ready (Cooper 1993).

The successful completion of the development stage requires close cooperation among the different departments of the company. Hise et al. (1990) argue that the key to improving new product success lies with high levels of joint effort between R&D and marketing during product development. The interface between these two functions is essential to the development of a product which is technically feasible and which meets customer requests. In the case where technology improves, or customer needs change during new product development, a company where there is a strong R&D/marketing interface can adapt its new product to those changes easily. This will reduce the chances that a new product which is not superior to existing ones, or which proposes outdated technology be launched on the market (Urban and Hauser 1993).

2.9- The testing stage.

Before commercialization, most models suggest that the new product be tested in the market (Booz, Allen and Hamilton 1982, Cooper 1993, Urban and Hauser 1993).

The objectives of a test market are to evaluate the performance of the new product in its final version, of its marketing strategy, and of its production process (Wind 1982). This stage of the new product process involves several activities such as in-house testing, user trials, pilot production, pretest and test market and a revision of financial analysis (Wind 1982, Cooper 1983). For example, the product can be marketed to a limited but representative sample of customers who give feedback on it (Bingham and Quigley 1989). Using information gathered during this phase, the project manager has to decide whether the product should be commercialized or not.

However, testing a new product may not be easy in some industrial markets where the number of customers is limited. In this case, the company has to adapt market testing and find other ways to validate its product than the traditional sampling. Other problems might arise when testing a new product. For example, products involving different components that cannot be tested separately (e.g., computer systems) may be hard to test on customers. Also, a company engaged in a market test has to make a compromise between getting fast to the market and conducting a test long enough to detect eventual pitfalls of the product (Cooper 1993).

A last problem with testing is to avoid competitive "espionage". Since a test market can last for a long period of time (from 1 to 6 months), companies have to be very careful when engaging in it. Although firms should do it to ensure product success, market

testing also give competitors an opportunity to see what is being planned. If the product is easy to copy, then competitors can respond very quickly and benefit from the company's efforts to commercialize the same product at the same time or even before (Wind 1982, Urban and Hauser 1993). Consequently, companies should make a tradeoff between the amount and the reliability of the data collected at this stage and the threat of competitive entry.

2.10- The commercialization and evaluation stage.

The last step of the new product development process is the commercialization, or product introduction to the market. In some models, commercialization is followed by an evaluation of product performance. Commercialization involves the implementation of both the production and marketing plans defined during the development stage. "If the tests have been well carried out, and barring any unforeseen or new circumstances in the market, the launch should be a simple matter of executing a well-designed plan of action" (Cooper 1983, p10). During product launch, the company should monitor and manage production schedules, customer service, financial results, and marketing activities. It is also recommended that engineering supports manufacturing and that a close interaction between sales, marketing and channel members is established to obtain a maximum cooperation from channel members (Bingham and Quigley 1989).

The last part of commercialization is a post launch review which should take place from 6 to 18 months after market launch, depending on the product and on the market considered. The company makes an evaluation of the project performance, sees if the

product meets target criteria, and makes the necessary corrections to keep it on track. This review will also be used to make a critical analysis of what has been done and what could be done better for the next project (Cooper 1993).

Following a formal NPD process seems to improve the chances of success for a new manufactured product. However, many other dimensions also play an important role in new product performance. These factors are described in the following pages.

3- Success factors in new manufactured product development.

For manufactured goods, several major empirical studies have been carried out over the past two decades to identify factors linked to new product performance. "Although these research efforts differed in the methods used for data collection and analysis, the type of products studied (industrial/consumer), and the locus of the study (USA, Canada, UK), the findings are often similar and consistent" (de Brentani 1991, p39). A summary of the major findings is provided in Table 2.

3.1- Early studies.

One of the earliest studies focused only on new product successes (Myers and Marquis 1969). The most important findings here were the importance of identifying and understanding customer's needs, and the importance of communication within the organization (Myers and Marquis 1969).

The first comparative study of product success and failure was Project SAPPHO, conducted by Rothwell (1972) in the early 1970's. It compared 43 pairs of product innovations (successful vs unsuccessful) in two unrelated U.K. industry (to control for possible industry effects) to identify factors that distinguish between success and failure. Two important dimensions that drive new product outcome were identified in this research: efficiency and effectiveness of R&D teams in their development effort; and need of a product champion with power and authority to lead the project (Rothwell 1972). Despite the political, cultural and economic differences between the UK and Hungary, comparable results were found in a smaller SAPPHO study of the Hungarian electronics industry (Rothwell 1974).

3.2- Cooper's studies.

Cooper's (1975) initial research on new product performance dimensions focused on product failure as the unit of analysis. The principal causes of failure identified were ineffective product marketing and poor market research. More specifically, inadequate assessment of market potential, poor understanding of competitor's strengths and weaknesses, and inaccurate product pricing were shown to have a negative influence on product outcome (Cooper 1975). Among the general reasons of new product failure, Cooper found that sales and profits margins were below expectations, that firms invested too much in the process, or that they had excessive development costs (Cooper 1975). Later, Cooper (1979) conducted a major comparative study of success and failure: Project NewProd. The first phase of this project (NewProd 1) contributed to research by finding

three new distinguishing characteristics between success and failure. These included superiority of the product for the customer, a strong market orientation, and technological synergy between product development and production (Cooper 1979, 1980). What distinguishes Project NewProd from most other new product studies is that it is continuous over the years, starting in the late 1970's up to now. Consequently, it can confirm earlier findings and determine to what extent these evolved over time (Cooper and Kleinschmidt 1987; Cooper 1993)

Results in NewProd 2 suggest that two new dimensions of successful product development could be added. The first is "market conditions" such as a market segment's potential size and growth. The second dimension is the importance of developing a product that is "technically superior" and innovative (Cooper and Kleinschmidt 1987). NewProd 3 added that successful products usually have a much sharper definition prior to the development phase, and that companies should pay attention to the quality of execution of development activities (i.e, pre-development, marketing, and technology activities) (Cooper 1993).

The evolution of success dimensions from NewProd 1 to NewProd 3 reflect the evolution of market conditions during the past twenty years. Increased competition and globalization of markets force companies to pay attention to more product dimensions than before, if they want to remain competitive.

Table 2: Correlates of New Product Success

Correlates of success	SAPPHO (Rothwell) (1972)	New Prod 1 Cooper (1979)	Booz, Allen, Hamilton (1982)	Maidique and Zinger (1984)	New Prod 2 Cooper and Kleinschmidt (1987)	New Prod 3 (Cooper) (1993)
Match customer needs	✓	✓	✓	✓	✓	✓
High value to customer		✓		✓	✓	✓
Innovative		✓			✓	✓
Technical superiority		✓	✓	✓	✓	✓
Screened on growth potential, etc					✓	✓
Favourable competitive environment	✓		✓	✓		✓
Market conditions		✓		✓	✓	✓
Fit internal company strengths		✓	✓	✓	✓	
Effective use of communication	✓			✓	✓	✓
Top management support	✓		✓	✓	✓	✓
New product organization			✓			
Use new product process			✓		✓	
High Contribution Margin				✓		
Skilfully marketed	✓	✓		✓		✓
Efficient development	✓	✓		✓		✓

3.3- Other major studies.

Booz, Allen and Hamilton (1982) study of new product practices in 700 companies suggested results similar to Cooper's (1979). This study showed that successful companies: use a formal new product process; are committed to growth through internal development of new products; have a structured new product organization; have experience in new product development; and have tailored their management style to changing new product opportunities (Booz, Allen and Hamilton 1982).

In their Stanford Innovation project, Maidique and Zirger (1984) examined over 330 electronics products successes and failures. On the whole, their findings supported Cooper's (1979) and Rothwell's (1972). In addition, they identified the importance of a financial dimension; that is, to be successful, a new product must provide a high contribution margin to the firm (Maidique and Zirger 1984).

3.4- Need of an international orientation.

Aside these major investigations, several smaller studies have been conducted in North America, Europe and Japan. Although the methodologies and the industries differed, they all confirmed the dimensions examined before, and added some others that may be specific to the industry or to the culture of the country surveyed (Lethimäki 1991; Edgett, Shipley and Forbes 1992). Of specific interest is Lethimäki's study, in Finland, which mentioned that a new product should have an international orientation to succeed (Lethimäki 1991). This finding confirms Kleinschmidt and Cooper's (1987) note that new products designed and developed to meet foreign requirements, and targeted at world or

nearest-neighbour export markets, outperform domestic products (Kleinschmidt and Cooper 1988).

3.5- Marketing/R&D interaction.

In one study, researchers focused on the marketing/R&D interaction as a factor of success in new product development (Hise, O'Neal, Parasuraman and McNeal 1990). It was found that for new industrial products, marketing action, alone, is not correlated with success. Only, when marketing and R&D demonstrate high levels of joint effort in determining the final design of new products, are new industrial products likely to achieve success. Thus, the key to improving new product success levels, according to the authors of this article, seems to lie with additional marketing/R&D involvement in day-to-day aspects of actually shaping the product physically (i.e.; product development stage of the NPD model), rather than with the up-front aspects of collecting and using input from the market or than with the end-of-the-process evaluation of the product.

3.6- New product process activities and product success.

Many researchers dealt with how the activities of the new product process are related to success. Two of the pre-development stages (i.e; initial screening, and preliminary market and technical assessment) as well as product development, appear to contribute significantly to new product success (Dwyer and Mellor 1991). As we saw before, the role of the pre-development activities is to weed out projects that would not meet company's financial criteria. Since measures of success often include financial figures, it

is not surprising to see that successful products met the criteria established for the Go decision in these stages.

Managers should reinforce and formalize the importance of those activities prior to and including product development. Cooper (1988) added that undertaking a detailed market study during the business analysis stage was strongly correlated with product outcomes. More generally speaking, upfront or pre-development activities stand out as activities that separate winners from losers (Cooper 1988).

3.7- Generalization to services.

Almost all new product studies examined above focused exclusively on manufacturing goods. Although this type of product was dominant in the North American economy during the 1970's and the early 1980's, changes have occurred. Since 1984-1985, most growth in the economy is due to services. Statistics Canada (1988) relates that income in the Business Services group increased by 36% between 1984 and 1986, and that the number of businesses expanded by 16% during this same period. Although the growth in revenues decreased (1988: 19.5%; 1989: 15.7%; 1990: 9.2%), the business services industry is still one of the most important part of the Canadian economy (Statistics Canada 1992). Changes have also occurred in the way manufactured products are marketed. More and more companies now offer packages in which the physical product is supported by services (e.g; a software hot line, a maintenance plan for a new car). The result of this evolution is that services are developed conjointly with manufactured products. However, very few studies focused on new service development alone.

Moreover, research conducted on the characteristics that differentiate products from services suggests that services should not be developed exactly the same way than physical products (Shostack 1977, Lovelock 1981).

The next part of this paper will examine how services differ from manufactured goods, what has been done in new service development, and which dimensions influence new service outcome.

III- NEW PRODUCT DEVELOPMENT FOR SERVICES.

1- Differences between products and services.

For a number of years, services have been associated with physical products in the "goods and services" mix. However, as Grönroos (1990) points out, marketing concepts, models and tools often seem inappropriate when applied to service firms, and there is a need to create service-oriented marketing frameworks. This is probably one of the reasons why most of the early studies on services focused primarily on the characteristics that differentiate services from physical products.

The next paragraphs will look at the four major elements that were found to set services apart from manufactured products. The objective of this part is to understand the dimensions that may have an influence on the new service development process.

1.1- Intangibility.

The first and most important distinguishing characteristic, intangibility, relates to the fact that services are abstract and conceptual in nature. Intangibility has two meanings, both of which present challenges for marketing: something which is non-material, impalpable; and something which is indefinable, which cannot be formulated, or grasped mentally (Webster's Dictionary). Because a service is more a performance than an object, consumers cannot touch, see, feel, or taste it in the same manner as they can sense a physical product (Zeithaml, Parasuraman and Berry 1985). The intangibility of services also comes from the fact that customers cannot buy elements such as service experience, time or process, even if the service comes with tangible trappings, such as a report or a pamphlet (Shostack 1977).

Intangibility creates a problem to service marketers, because customers can only perceive and evaluate the service in a subjective manner. Clients usually describe a service by experience, trust, feeling or security. This creates uncertainty on the customer side (Grönroos 1990) and the marketer's task is to compensate for intangibility as much as possible, so customers can make a more objective and reassuring evaluation.

Berry (1980) has pointed out that most market offerings are a combination of tangible and intangible elements. Although the service itself is intangible, some very real physical elements make up its total entity (Shostack 1977). For example, the setting, including colour schemes, advertising, printed or graphic materials, and stationery, all define a service's style, and are tangible elements associated with a given offering (Shostack 1984).

The first consequence of intangibility on new service development is that during the design stage, service companies should include physical element (e.g.; colour, pamphlets) that consumers use to check for service effectiveness. For example, looking at the promotion side of services, intangibility means that a service can only be described and promoted with abstractions (Bessom 1973). An example of tangible evidence in this case would be the rock associated with the Prudential Insurance Company. The general idea, here, is to provide a tangible surrogate that will comfort customers for what the service promises but that they can't directly experience before the sale (Levitt 1981)

Another problem linked with intangibility is that service development mainly involves concepts and ideas. A consequence of this is that services are perceived as easier to develop than physical products. This has lead to a haphazard new service development

process in many companies (Shostack, 1977; de Brentani 1989). Companies often develop new services that do not meet required customer needs or functional specifications, simply because they go through the development process too quickly (Shostack 1984). For the same reason of ease of development, Easingwood (1986) noticed that many companies developed too many new services because they are easy to develop and because competitors can quickly copy them, thus annihilating any competitive advantage for the pioneering firm. This resulted in an increase in confusion among customers.

Another cause of confusion for customers is that they can hardly evaluate competitive service offerings using tangible evidence, as they would do for physical products. Therefore, companies should differentiate their services as much as they can, so potential buyers won't have this problem (de Brentani 1989). For example, when developing a new-to-the-world service, a firm could create a strong service image and link it to its corporate reputation, to help clients to evaluate the service (Thomas 1978).

To summarize this part, although intangibility seems to make services easier to develop, it in fact increases the complexity level of service development because it forces companies to deal with abstract concepts such as feelings and trust. For the same reasons, it may also be an obstacle for successful market launch (de Brentani 1989). Therefore, companies should not neglect any phase of the development process. Research has shown that, as in the physical product sector, service development needs to be meticulously planned by managers, and that services should be fully tested, when possible, before and after their market launch (Shostack 1984; Bowers 1986).

1.2- Simultaneous production and consumption.

The second characteristic that distinguishes products from services, is that services are produced and consumed more or less simultaneously. Generally, goods are produced, then sold, then consumed. Services, on the other hand, are usually sold first, then produced and consumed simultaneously (Berry 1980).

A first consequence of simultaneity is that a service cannot be easily separated from the seller who is almost always the provider as well (Onkvisit and Shaw 1991). Therefore, inseparability forces buyers to be in intimate contact with the service production process although they may see only one part of this process (Jackson and Cooper 1988). Frequent contacts between customers and the service firm's delivery system means that customers "are buying both the end result of the service as well as the service production and delivery experience" (de Brentani 1992, p4).

Managers must pay attention to this effect of simultaneity. Since service speed, reliability and variability are linked to the perceived quality of the entire service offering (Grönroos 1982), they have to focus their efforts to give customers the best possible experience of the tangible, or "live", part of the service (Grönroos 1990). This customer/producer contact forces managers to be both production- and marketing-oriented during the design stage (Grönroos 1990, Langeard and Eiglier 1973; Booms and Bitner 1982). Improving the friendliness of a piece of facilitating equipment or training frontline personnel are examples of actions a manager could take to overcome some of the problems associated with simultaneity, and to increase client satisfaction. In professional services, simultaneity

can be viewed in positive terms since managers can take advantage of the interaction with customers to respond directly to the specialized problems and needs of clients firms.

Another result of simultaneity is the need to market new services to the firm's front line personnel (Lovelock 1981; Easingwood 1986; de Brentani 1989). Most successful service marketers make the training of the front line employees part of the marketing function because they feel that customer contact is one of the most important aspects of marketing a service (Fryar 1991). Berry (1980) pointed out that in the marketing discipline, great stress is placed on distributing goods where and when customers desire them to be distributed, that is, to the "right place" and at the "right time". With services, it is often important to distribute them in the "right way" as well.

1.3- Heterogeneity.

The third element that differentiates services from physical products is heterogeneity. Because of the impact of people, either employees or customers, on the production and delivery process, the potential exists for high variability in the performance and in the perceived quality of a service (Grönroos 1990). Services tend to be heterogeneous in the sense that they cannot be completely standardized (Onkvisit and Shaw 1991). Frequently, a challenge to service marketers is to maintain an evenly perceived quality in service production.

The level of heterogeneity tends to differ in the extent to which the service is "people-based" or "equipment-based" (Thomas 1978). When a service involves a larger human component (people-based) than another (equipment-based), the outcomes of this service

tend to be less standardized and uniform than the outcomes of the equipment-based service operation (Berry 1980), because the people-based service involves a larger social relationship (Grönroos 1990). In some cases, offering less variability could be used as a competitive advantage (e.g. courier services). In other instances, such as business consulting, the fact that the service varies each time it is produced may offer opportunities to customize the offering, to respond precisely to client needs, and therefore to increase buyer satisfaction (de Brentani 1989).

For new service developers, an important question therefore is: how variable should the service offering be and how do we design a delivery system that achieves the appropriate degree of divergence? Since heterogeneity may have a negative impact on perceived quality when it is seen as an inconsistency in service execution and outcome, service processes need to be meticulously designed so managers could identify the desirable, or tolerable, level of variability (de Brentani 1989).

1.4- Perishability.

The last factor responsible for service uniqueness is perishability. Because of the intangible nature of services, their production can only occur at the time they are consumed. Services cannot be kept in stock in the same way goods are. Grönroos (1990, p30) uses the following example to describe perishability: "if an airplane leaves the airport half-full, the empty seats cannot be sold the next day".

Perishability can lead to capacity and production-efficiency problems, thus increasing costs for unused capital and human resources (de Brentani 1992). Of course, the necessary

equipment facilities and labour can be held in readiness to create the service, but these simply represent productive capacity, not the product itself. Scheduling operations and controlling quality are key management problems in services. However, these activities are more difficult to control due to the presence of the customer in the service process (Fitzgerald et al. 1991). Consequently, service managers must work to smooth demand levels in order to match capacity (Lovelock 1981). Berry (1980) states that one solution companies could use to deal with perishability is to develop new services that make use of existing operations systems during periods of low demand. In peak periods, Grönroos (1990) suggests that services companies try to accommodate customer demand, and that they "keep customers in stock" (e.g., try to keep customers waiting at the bar when the restaurant is full).

Levitt (1976, 1981) proposes another solution to solve the perishability problem. To avoid production inefficiencies and to reduce their costs, companies should "industrialize" their service production and delivery by replacing people for equipment. Levitt also urges firms to introduce technology and planned work systems in their service processes.

1.5- Differences between consumer and industrial services.

Developing and selling services to individuals as opposed to organizations implies some basic differences from a marketing point of view. Industrial buying behaviour in business-to-business services involves a complex network of influences that forces marketers to adapt their strategies to each customer situation (Ames and Hlavacek 1984). The technical side of industrial services and the larger dollar size of orders imply that marketers are

more knowledgeable not only about their products, but also about client needs. However, because the number of customers is smaller than in consumer markets, and because buyer/seller relationships are more intimate, it is easier to respond to customer preferences (Hutt and Speh 1992).

Jackson and Cooper (1988) suggest that two further characteristics should be added to distinguish industrial from consumer services. The first of these is "specialization". Although there is a trend toward standardization in all aspects of production, the services themselves are still customized to respond to specific customer needs (Jackson and Cooper 1988).

Specialization adds complexity in the buying process of services. Organizational buyers rely heavily on both external and internal sources of information to decide which service they should buy. However, because the selling company makes efforts to adapt its services to customers' needs, it is harder for buyers to gather pertinent information, therefore creating uncertainty. This may lead to problems when buyers want to set specifications for the product and then convey these specifications to the vendor (Jackson and Cooper 1988). The role of the service marketer is, therefore, to reduce the uncertainty associated with specialization, and to facilitate the exchange and understanding of information with his clients. Moreover, the marketer should evaluate the level of specialization needed for each contract in order to reduce unnecessary confusion.

The second dimension differentiating industrial from consumer services is "technology". "Industrial marketing is cursed/blessed with the technological nature that prevails"

(Jackson and Cooper 1988, p117). This dimension creates new problems for service marketers. They have to take into account that customers may not have a sufficient technological background to take a decision, and that they are likely to seek help from other departments in their company. Moreover, industrial customers often rely on the vendor to provide information and assistance in purchasing technically complex products (Jackson and Cooper 1988). Here, the role of the service marketer will also be to facilitate information exchange and understanding, by creating links between the concerned departments, or by training the buyer to the technology.

Knowing how business-to-business services differ from consumer services and products is a required input to examine how new industrial service are developed. The next pages will review the new service development literature and show how these characteristics influence service development.

2- New service development (NSD).

For many years, new service development has been considered as an extension of the product development process for goods. A result of this assimilation is that only a tiny portion of the services marketing literature deals with the issue of new service development (Bowers 1989). One aspect of the studies that have been conducted on new service development is that they have focused on very specific issues of the process such as new service design (Shostack 1982, 1984), or modelling of the service operation (Chase 1983). Moreover, researchers have usually examined cases or specific industries

(e.g., retail banking, insurance), and most have concentrated on the consumer service sector (Bowers 1986, Easingwood 1986). Only recently have researchers and practitioners started to look more closely at the issue of new service development in the business-to-business services sector (Scheuing and Johnson 1989).

Most studies claim that new services are developed in a haphazard fashion (Shostack 1977, de Brentani 1989). They also deplore that most of the service organizations that use new service development processes are not open to marketplace influences (Bowers 1989, Scheuing and Johnson 1989). Unfortunately, this behaviour often leads to project failure because the new services frequently do not respond effectively to customer needs and often involve fail points that result in product failure.

Another characteristic of service firms is that they often do not strategically plan their development of new offerings through a formal new service planning process. They seem to rely heavily on competitive imitation and customer relationships to foster new ideas (Martin and Horne 1993). However, services originating from ideas based on competitive products often have a harder time competing in the market. These services cannot be differentiated from competitive one principally because the intangibility characteristic creates barriers to differentiation. Firms therefore need a systematic process of new service development that is sensitive to external influences and incorporates consumer reactions and criticisms if they want to develop successful new services (Bowers 1989).

2.1- New service development models.

New product development models for manufactured goods have formed the basis for several new service development models. Except from the approach recommended by Shostack (1984), these models tend to follow the product development format reported by Booz, Allen and Hamilton (1982). Although somewhat different actions are involved in each step, these models still use the same framework, moving from business objectives, through evaluation and design, to the commercialization stage (see Table 3).

One model tried to take into account the complexity of service design and the many iterative steps involved in service development (Scheuing and Johnson 1989). This 15-step model highlights the key factors that influence the design process, both internally (e.g., marketing objectives, internal sources of ideas, budget development...) and externally (e.g., external sources of ideas, prospects, users, market assessment...). Although this model is also based on Booz, Allen and Hamilton (1982), it incorporates a more detailed and complete set of steps to guide managers in their new service development endeavour (see Scheuing and Johnson 1989, for more details).

2.2- Service strategies.

Like developers of manufactured products, service developers should start the process by reviewing or creating both a business strategy and a new service strategy (Bowers 1989, Scheuing and Johnson 1989). The new service strategy must define the goals of the project in terms of target market, of positioning into the existing product line, and of expected financial returns. This initial step will drive and direct the new service

innovation effort and is, therefore, likely to increase effectiveness and efficiency. It will also give a solid basis for discussing resources to be allocated, and standards of performance (Lovelock 1984).

2.3- Idea generation and screening.

The next steps in developing a new service offering are idea generation and idea screening. These phases of the process are also very similar to the ones for new manufactured products and involve almost the same activities. Easingwood (1986) suggests that frontline personnel be used as a source of new ideas, because of their knowledge of customer needs, even if this may increase their workload. Bowers (1989) advises managers to stay in touch with changes in their business environment to get innovative ideas, and especially to anticipate the moves of regulatory agencies in order to gain time on competition. Services that get first to the market usually benefit from a pioneering advantage because the company name is associated with them in customer minds (Ames and Hlavacek 1984).

Service developers should pay particular attention to the screening of ideas because this procedure separates the more promising from the less creditable ideas (Easingwood 1986). Screening will prevent companies to spend their resources on services that are likely to be withdrawn at a later stage of development. During screening, some authors noticed that service fit to company's corporate image was often looked at by developers in order to avoid any possible negative consequence of the new service on other existing services provided by the company (Lovelock 1984, Easingwood 1986).

2.4- Concept development.

Developing a service concept and testing it, are the next stages of the process. However, this part may be difficult to realize because of the intangible nature of services. Shostack (1984) proposes the blueprint as a solution to this problem. Like those used by engineers, a service blueprint is a detailed diagram showing service dimensions. A blueprint helps managers to identify inputs needed in producing the service; to handle errors, bottlenecks and recycling steps; and to define the standards of service execution (Shostack 1984). Blueprints can be evaluated not only by those who develop the service, but also by customers, contact personnel and support staff (Bowers 1989). The role of service concept testing is to evaluate "whether a prospective user (1) understands the idea of the proposed service, (2) reacts favourably to it, and (3) feels it offers benefits that answer unmet needs" (Scheuing and Johnson 1989, p32). However, Wind (1982) argues that, because of intangibility, it may be more appropriate to move directly from service concept testing to test marketing of its alternatives. This action will help to reduce the risk of competitive entry, mainly because the development process is faster (Wind 1982).

Table 3: New Service Development Models

Shostack (1984)	Cowell (1984)	Scheuing and Johnson (1989)	Bowers (1989)
			Business strategy
		New service strategy	New service strategy
Service definition	Idea generation	Idea generation	Idea generation
Information search and alternatives	Idea screening		
Draw boundaries of service	Concept development and testing	Concept development and testing	Concept development and evaluation
	Business analysis	Business analysis - Project authorization	Business analysis
Blueprint	Service development	Service design and testing	Development
Blueprint analysis		Process and system design and testing	
Decision to implement		Marketing program design and testing	
Implement service (test)		Personnel training	
		Pilot run	
Pre-launch marketing activities	Testing	Test marketing	Market testing
Market launch	Commercialization	Full-scale launch	Commercialization
Post-introduction audit		Post launch review	

2.5- Service development.

After a business analysis stage that is analogous to the one for new product development, the service designer should develop and test the new service. This involves designing the delivery process and system, the marketing program, and training personnel. During this phase, all the above activities will be tested by prospect users (Scheuing and Johnson 1989). In the same vein, Cowell (1984) says that staff may be recruited or trained, facilities constructed, and communications systems established. He specifically insists on the fact that managers should pay attention to both tangible elements and to the service delivery system.

2.6- Testing.

After development, the service process goes to the market testing stage. The role of this step is to determine customer's acceptance and to ensure the smooth functioning of the service. If necessary, refinements can be made to both service delivery and marketing mix (Scheuing and Johnson 1989). Langeard, Bateson, Lovelock and Eiglier (1981) contend that new services could be tested using prototypes of the equipment, under laboratory conditions, with a representative sample of prospects.

In spite of its importance, Shostack (1984) noticed that the testing phase is often bypassed by managers because market testing is often as expensive in labour and equipment costs as a full market launch. Another reason to bypass testing is that intangibility creates difficulties to test and to evaluate the new service. Also, market testing allows competitors to get information on the new service. Since services cannot be patented, competitors can

easily copy the new service and probably introduce it to the market. The firm that really developed the service therefore loses its competitive advantage of being first on the market. Scheuing and Johnson (1989) added that most new services do not go through market testing for two other reasons: either the new service has the purpose of completing the product line, or it is a copy of a competitive service. However, bypassing testing makes it harder to correct mistakes or to bring service modifications needed to improve customer acceptance or service delivery (Shostack 1984).

2.7- Commercialization.

The last step of the new service process, commercialization, involves the same activities as described earlier for the new product process. The post-launch evaluation, however, is different. Easingwood (1986) relates the difficulty of measuring true costs as a problem faced by companies in service evaluation, because these costs are shared with existing products. From a quality point of view, the last corrections to service production should be made during commercialization and evaluation. Managers should also identify what could be modified to enhance the service, and therefore engage in a new development process (Shostack 1984).

To summarize this part, we saw that new service development models are very similar to new product development ones. Except from the differences brought by the distinguishing characteristics of services, we can expect that success factors in developing new services are, in some respects, similar to those that drive new product outcomes. The next part will review the literature on success factors for new services.

IV- SUCCESS / FAILURE STUDIES IN NEW SERVICE DEVELOPMENT.

As a management consultant has stated: "There is little information available to help managers develop and launch successful new services" (Terrill 1992, p24). While the manufacturing sector has undergone substantive research with regard to what impacts on new product performance, in the industrial service sector, very few studies have focused on the factors that are associated with new service success and failure (Easingwood 1986, de Brentani 1989, Terril 1992, Martin and Horne 1993). A summary of the major findings is provided in Table 4.

1- Early research on NSD success factors.

Easingwood (1986) suggested a few service performance factors. Although his study dealt with NSD processes and was not directly concerned with success and failure in industrial services, the results give some interesting insights about which dimensions could be responsible for new service success. He found that communication was a key point in new service development in order to avoid confusion, due to proliferating products, among frontline personnel. He also detected that using formal NSD processes and being effective in NSD management might have an impact on new service performance. Moreover, his results show that companies that tested their new services on a sample of potential customers tended to be more satisfied with the performance of these projects.

2- De Brentani's study.

2.1- Description

Only one major empirical study has focused on the dimensions that are likely to be causally linked to new industrial service performance (de Brentani 1989, 1992). This study analyzed 274 new service projects in 115 companies. These projects represent a broad cross-section of business-to-business services including: financial services, transportation and communication services, professional services, and other services. The survey respondents, managers who are intimately and regularly involved in their company's service development, selected two recently introduced services (one success, one failure). They then reassessed each project in terms of its overall degree of success or failure, 16 performance measures, and 104 items capturing the nature of the new service offering, market characteristics, and the characteristics of the NSD function within the firm. The questionnaire was comprehensive reflecting past new product studies, the characteristics that distinguish services from manufactured goods, as well as those that define the industrial services sector.

Looking at how this study was carried out, a first step was to identify the dimensions that describe new industrial service projects. This was achieved through a factor analysis of the descriptive variables. The second research question was to determine which of these dimensions are related to new service success and failure. This question was addressed differently in several analyses. The results of these analyses are described in the next sub-sections.

2.2- Major determinants of success for industrial services.

The first analysis conducted by de Brentani (1989) had three major goals. The first one was to identify the principal measures that companies use to evaluate the performance of their new services. Results show that service firms tend to use four different types of success measures. "Sales and market share performance" is the most common one. It refers to the extent to which new services achieve high levels of sales, above average market growth, or a large market share. The second performance measure is "competitive performance" and describes the performance of the new service in terms of buyers perceptions of service superiority and service experience. "Other booster" is used by service companies to evaluate the performance of auxiliary services that are developed to boost the sales or the profitability of other services in the product line. Finally, "cost performance" is the last performance dimension used by service companies and measures "both the cost effectiveness of the new service itself as well as its ability to achieve cost reductions for the firm" (de Brentani 1989, p245).

The second research objective was to determine the correlates of each these success measure. Results of de Brentani's study show that new services rating high on "sales and market share performance" are market oriented, followed a formal NSD process during their development, and are synergistic with the marketing capabilities of the service company. In terms of "competitive performance", successful new services tend to be innovative, to respond to customer needs, and to provide customers with high levels of service quality and with a superior service experience. New projects evaluated on the "other booster" performance measure not only tend to be market oriented, and to be

produced by experts or professionals, but also have a high degree of synergy with the company's resources and expertise. Eventually, projects that achieve high cost performance are developed with formal NSD processes, fit with the service company's resources, and tend to be improvements or modification of existing services (de Brentani 1989).

The last objective of this first analysis was to examine the possible effects of service characteristics on new service performance. Intangibility implies that new services should provide tangible evidence of quality in order to succeed on the sales/market share and "other booster" performance measures. Other consequences of intangibility are that proliferation of new services and using haphazard NSD processes both have a negative impact on sales and competitive performance.

Looking at simultaneity, new services that offer a superior client interface and where production personnel is actively involved in the new service development process tend to succeed on the competitive performance measure. Heterogeneity implies that new services that reduce divergence in service delivery and new services that are tailored to customer needs are more likely to reach success on competitive and sales performance measures. Finally, in terms of perishability, projects that improve production economies and that respond to variations in demand tend to improve their cost performance (de Brentani 1989).

Another analysis of the same database (de Brentani 1991) confirmed the above findings. However, in this case the 104 service descriptive variables were grouped with factor

analysis. The 17 resulting factors were then used as independent variables in four multiple regression analyses where the dependent variables were the same as described above.

Table 4: Correlates of New Service Success					
Correlates of Success	Easingwood (1986)	de Brentani (1989)	Tennil (1992)	de Brentani (1992)	Martin and Horne (1993)
Market potential				✓	
Effectiveness of NSD management	✓		✓	✓	✓
Overall corporate synergy		✓	✓	✓	✓
Expert/people-based service		✓		✓	
Service quality (tangible) evidence		✓	✓	✓	
Formal NSD process	✓	✓	✓	✓	✓
Quality of service experience		✓	✓	✓	
Specialized initial market		✓	✓	✓	
Responds to demand cycle		✓		✓	
Service Newness to market (negative)				✓	
Barriers to competitive duplication			✓		
Customer feedback	✓		✓		✓
Service champion					✓

A new descriptive dimension of NSD projects, "effective NSD management" was found to be related to sales and market share performance. When top management supports new ideas, and when communication is encouraged inside the company, new services are more likely to succeed. In the same vein, Heskett (1986) stated that communication and top management's support positively enhance the new service development process.

Another factor, product-market fit (i.e., satisfying clearly identified customer needs, being consistent with existing customer values and systems and solving important customer problems) was found to be causally linked with competitive performance.

In terms of the cost performance measure, two of the previous items (i.e., "corporate synergy", and "service modification") were not confirmed as correlates of success. However, findings show that two new service dimensions, "effective NSD management" and "overall synergy", play an overriding role in achieving high cost performance.

Similarly to the case of the previous performance measure, two "other booster" success factors (Expert service and market orientation) were not confirmed by this analysis. However, results show that services that are targeted to a small number of key clients, and that are not totally new to the firm tend to succeed on the "other booster" performance measure.

A third study of the database was conducted somewhat differently. Only one multiple regression analysis was run with the global measure of success as the dependent variable and with the different NSD descriptive factors as independent variables (de Brentani 1992). This analysis not only confirms the dimensions found in the previous ones, but also associates new service success with service quality evidence and with the expert/people based character of business-to-business services.

New services are more likely to have outstanding performances when customers interact with experts during service production. This is especially true for industrial services which depend much more on the skills and expertise of the persons who produce them

(Gummesson 1981). In terms of quality evidence, successful new services tend to give tangible trappings (i.e., a physical proof to help customers to overcome intangibility) so customers can assess service quality. Berry (1980) and Shostack (1977) also argue that providing tangible evidence of quality will help to differentiate the proposed service from competition.

2.3- Industrial financial services.

Because financial services represent such a dynamic and key economic sector, two analyses of de Brentani's database that relate to industrial financial institutions were conducted in order to examine more specifically the factors that influence success and failure for new industrial financial services (Cooper and de Brentani 1991, de Brentani and Cooper 1992). Findings show that similar dimensions to the ones discussed above distinguish new financial service winners from losers. However, one new success factor was identified: quality of execution of new service launch.

Activities such as testing the service before launch, having a detailed and documented launch plan, training service personnel before commercialization, or having a formal promotional program, are all related to excellent new service performance. Despite this finding, surprisingly, de Brentani and Cooper (1992) noticed that most financial service companies do not market test their new services prior to launch.

This is probably due to the fact that market testing of a new service not only is almost as expensive as a full launch, but also gives competitors an opportunity to copy the service. Nevertheless, as indicated by the research results, formalizing launch activities

obviously contributes to the key launch concerns such as frontline training, fewer service failpoints, and better promotion.

3- Other major studies.

Aside the broad empirical research described in the previous pages, a small number of less extensive studies have also attempted to explain the dimensions influencing new service success. All these studies originated after de Brentani's, and all of them confirm her findings.

Martin and Horne (1993) looked at how service innovation influences the performance of a company. Their results confirm that successful firms tend to be effective in managing their new service development and that they use formal NSD processes. They also substantiate that successful companies develop synergistic products and that they make great use of their marketing resources, especially in terms of using customer feedback during service development. Martin and Horne (1993), however, add that when a product champion (i.e., a person responsible for the new service project from product objectives to commercialization) is in place, the company is likely to achieve better results.

A Chicago consulting firm, Kuczmariski & Associates, also conducted an investigation to determine the factors responsible for NSD success (Terrill 1992). Results from their interviews and from their survey are consistent with de Brentani's. In addition, however, their findings show that managers should also look at how customers are likely to perceive quality in future years. Terrill (1992) states that successful services, in a near future, will focus less on operational capabilities and more on service delivery to

customers. Companies will have to create "value delivery" to their customers by eliminating time between production and delivery.

V- PROFESSIONAL SERVICES AND EXPECTED FINDINGS.

When a firm sells an industrial service that involves very specialized skills and which is of an advisory nature, the service rendered is usually referred to as a "professional business-to-business service". For example, corporate lawyers provide professional services. They assist their clients in very precise legal areas (i.e., specialized skills), but do not solve any of the clients' problems until the customers agree that the proposed solution is in their best interest (i.e., advisory).

Over the last decade, the number of professional service companies have increased dramatically, to a point where the professionals themselves are saying that the market is almost saturated. As in other sectors of the service industry, the growth in professional services was accompanied by a high rate of new service development. However, not unlike new product ventures in other sectors, a high rate of failure has been observed for new professional services (Connor and Davidson 1990).

The literature on new service development in professional services does not provide any clear description of the dimensions that influence success or failure. Most articles have been written by practitioners or professionals, and dealt more with day-to-day management and marketing issues (e.g., newsletters or publicity) in very specific types of services (e.g., public relations, chartered accounting) (Eidson 1993, Orsborn 1992). A few academic studies were also conducted on professional services marketing and management (Gummesson 1981, Maister and Lovelock 1982, Lynn 1987, Day and Barksdale 1992), but none have looked at new service performance dimensions.

The literature offers opportunities to look at new professional services under a new angle. Moreover, de Brentani's (1989) study included a substantial sub-sample of new professional service projects. The present research will therefore try to determine the dimensions causing new industrial professional services success and failure.

1- Definition of a professional service

Although there is no generally accepted definition of what a professional service is, Gummesson (1981, p126) proposes the following:

- A professional service is qualified, it is advisory and problem-solving, even though it may also encompass some routine work for clients.
- The professionals involved have a common identity as, for example, management consultants or lawyers, and such professionals are regulated by traditions and codes of ethics.
- The service on offer, if accepted, involves the professional in taking on assignments for the client and those assignments are themselves the limit of the professional's involvement. Such assignments are not undertaken merely as overtures to sell hardware or other services.

Professional service marketers act as experts for their clients. Their role is to assist clients in taking decisions, whether because clients do not have the proper skills to make the decision by themselves, or because they want to reduce their costs (e.g., the company does not need a full time employee to perform the task), or to save time (Maister and Lovelock 1982).

2- Professional service expertise and its consequences.

A professional service's main specialty is often a subject area or a specific skill (Chan 1992) Hence, it is the service company's potential ability to solve a problem that is being

sold to customers. It is the combination of this advisory ability and of a high degree of specialization that differentiates professional services from other industrial services. In the next pages, the implications of this advisory expertise on service characteristics will be described as well as the success dimensions that could be expected from this study.

2.1- Service offering.

A first consequence of specialization is that professional service marketers need to evaluate very precisely the types of services they want to offer to the market. According to pundits, the product line should not be too narrowed, nor should it try to satisfy too broad a range of customers.

Holtz (1983) argues that a common mistake made by neophyte professional service marketers is to offer too narrow a range of services. Narrowing excludes a part of the potential market and may not provide sufficient revenues to the firm in order to survive, especially if the chosen market segment is highly competitive. For example, an engineering firm interviewed for the present research was expanding its operations from computer systems to communication systems, in general, because the market was not profitable enough in computer systems, alone.

At the same time, offering too broad a range of services increases the risk associated with not being able to carry out the work successfully (Chan 1992). Research has shown that one of the most important criteria used by customers when selecting a professional service is expertise and competence (Day and Barksdale 1992). Being more generalist than specialist implies that the professional service firm takes on assignments that may not fit

exactly with its initial competencies. Therefore, offering too broad a range of services might lead to reduced sales and possibly to company's failure since being a highly competent "generalist" is far more difficult to market successfully to client firms (Chan 1992).

2.2- Intangibility.

By its very nature, service expertise is intangible. It cannot be physically shown to customers, therefore creating a problem when clients have to evaluate the level of expertise of a professional service marketer (Katz 1988). Clients usually believe there are important risks associated with purchasing professional services due to the lack of well defined data about what a given service represents (Lynn 1987). Crane (1992) suggests that better communication between service provider and customer might help to overcome this evaluation problem.

Other approaches by which customers can attempt to evaluate the expertise of professionals is to use the reputation of the service company as well as the previous experiences of customers who purchased similar service offerings from the service provider (Day and Barksdale 1992). Lynn (1987), however argues that because of the high degree of expertise involved in professional services, few information sources are available to help buyers in evaluating a professional service firm. Clients, therefore, have difficulties in perceiving the major differences among service companies.

Also, professional service marketers must create a trust relationship with their clients. Since customers are often insecure when buying this type of service, trust between buyer

and seller is essential for ensuring the perception of service quality and expertise. Afterwards, if customers feel comfortable with the service experience, loyalty to a particular company is likely to increase and, as result, to reduce risk, and lead to other assignments (Gummesson 1981).

From these findings, it might be hypothesized that communication, previous customer experience with similar services, and buyer/seller relationships are potential determinants of new product success in professional services.

2.3- Heterogeneity.

Expertise in professional services might also affect heterogeneity of service delivery. As in the case of most other industrial services, heterogeneity in professional services implies a difference in the precise character of the service each time the service is rendered. When too much variability occurs from a given service offering, clients may view this negatively as lowering the quality of the service. Hence, because the essence of a professional service is primarily the expertise that is being offered (Gummesson 1981), the heterogeneity factor makes it extremely difficult to deliver constant service quality. In periods of high demand, for example, service providers may not spend as much time or exert as much effort in service production as in periods of low demand (Crane 1993). Both following a formal NSD process in order to maintain service variability at acceptable levels and training frontline people to reduce inconsistencies in service delivery might have positive influence on new service performance.

2.4- Simultaneity.

Thirdly, professional service expertise is related to the simultaneity characteristic of services. Simultaneity of production and consumption means that clients must be incorporated into the service production system (Zeithaml, Parasuraman and Berry 1985). Simultaneity also implies that customers may influence the performance and the quality of the service delivered (Crane 1993). In many cases (e.g, accounting service), how well the service provider performs, largely depends on how well the customer performs (e.g., gives accurate information).

In the case of professional services, contacts within the client service company are usually also experts. This interaction among different types of experts might create problems in terms of communication (e.g., the service provider uses jargon) which in turns renders the evaluation of customer needs more difficult (Holtz 1983). For example, Maister and Lovelock (1982) argue that one of the most important parts of a service is diagnosis of client needs. When customer requirements, wishes and values are initially well defined, the later stages of service production flow more smoothly. It could therefore be expected that the training of front-line personnel for the purpose of establishing good client relationships and for helping them to define customer needs is an important success dimension for professional service offerings. Also, since previous customer experience with a given service, or with a similar one, reduces the chances of poor communication, it is likely that this factor enhances the probability of success of a new service.

2.5- Perishability.

The last service distinguishing characteristic, perishability, is also affected the fact that by professional services tend to be highly expert. Perishability implies that professional service marketers should find several ways to handle fluctuations in demand and attempt to match production capacity with the different demand periods. This is particularly important because, according to Day and Barksdale (1993), customer satisfaction with professional services is influenced by whether or not the service firm can cope with demand.

Moreover, in professional services, the cost of unused capacity is very high because service employees are experts and command high salaries. For example, "if a physician is paid to see patients but no one schedules an appointment, the fixed cost of the idle physician's salary is a high inventory carrying cost" (Crane 1992, p14). It could, therefore, be expected that a new service that respond to changes in the demand cycle or that completes the existing product line to fill unused capacity is more likely to succeed.

3- Professional services and marketing.

Most articles that deal with the topic of marketing professional services agree on two points; that is: (1) professionals usually do not believe that marketing is necessary for commercializing their skills, and (2) that clients will consume the service simply because the service exists (Chan 1992, Crane 1993). However, with the radical increase in the level of competition in the consulting industry and, because new services and new service firms can be easily created, professional service suppliers can no longer "hang out their

shingle" and wait for clients to "beat a path to their door" (Chan 1992). As a result, professionals are becoming more and more interested in planned marketing programs for creating and selling their services offerings (Lynn 1987). A consultant's ability to survive now depends not only on a specialized technical knowledge but also on the firm's ability to market these skills and capabilities.

Gummesson (1981) has offered 25 propositions that provide guidelines to professional service marketers. A recurring theme in this set of propositions is that service firms must pay attention to marketing. This is true even if the professional service firm is currently satisfied with its actual number of clients. Gummesson (1981) reminds these companies that they still need to prospect for new clients and to have a long-term view about client turnover. Being informed about changes in customer needs and about the evolution of the industry is vital for them, since responding to client needs is the basis of successfully selling to any market (Crane 1993).

It could be hypothesized that firms which are proficient in marketing are more likely to launch successful new professional services because the new services will fit customer requirements more closely.

Equally important to service marketers is the creation of strong and durable relationships with their clients within their particular market segment. According to Day and Barksdale (1992), an important criterion for client satisfaction is that the service company appears to want a long-term relationship with the buyer. From the customer side, a satisfactory

long-term relationship means reduced risk because there is less need to change and therefore less uncertainty when purchasing a service. On the service company side, it means reduced marketing costs (i.e., cost of getting new assignments) since existing customers who are satisfied are likely to refer the service company to other clients (Lynn 1987). It also means a more stable workload for the company, thus reducing the magnitude of peaks and lulls in demand (Gummesson 1981).

The above findings suggest that new professional services that are superior to competitor's offerings are more likely to succeed. Moreover, providing customers with unique benefits and superior quality helps to create strong relationships and creates a strong positive experience for customers (Orsbom 1992).

VI- RESEARCH METHODOLOGY AND RESULTS.

1- Overview.

The objective of this study is to determine what factors lead to success or failure in the development of new professional services in the business-to-business service sector. The basis for this study was the major empirical research undertaken by de Brentani and which was described above. This study, it might be remembered, looked at 274 new service projects in a broad empirical sample of firms covering over 10 different service industries (de Brentani 1989). Managers familiar with their firm's new services development activities had each rated one successful and one unsuccessful new industrial service project in terms of 121 descriptive variables.

The first step in achieving the goal of the current study was to create a sub-sample from the above database. This sub-sample groups 112 success and failure cases from the 55 professional service companies that took part in the study. The second phase of the analysis was to identify the dimensions that describe new professional service projects. Using principal component and reliability analyses, sets of descriptive variables were purified and identified as several composite factors. The next stage entailed a multiple regression analysis in an effort to determine which of these descriptive factors are causally linked to the success and failure of new professional services. Finally, a factor analysis using the LISREL model was run in order to confirm the factor structure derived from the initial principal component analysis.

2- Description of the database.

The database used in this analysis was taken from the study conducted by de Brentani (1989). The author describes it as follows (de Brentani 1992, p41):

A research population of 184 companies known to be active in new service development and comprising 12 business service sectors were contacted. Managers responsible for NSD were asked by telephone to take part in one or in two research phases. Phase one involved personal interviews with managers in 95 firms exploring such topics as: the strategic role of new service development, internal and external factors that drive or hinder NSD, the new service development process and its management, and the innovation orientation and the NSD performance of the firm. These interviews provided a basis for designing and testing the questionnaire used in the second phase of the study. In phase two, the original sample was expanded to 184 companies and the unit of analysis became the individual new services these firms had introduced in the past five years. The managers each selected two projects -- one success and one failure. Definitions of what are "New" services could range from modifications, to major innovations, to services that were new only to the firm: "successes" were defined as ventures that had met or exceeded the overall goals for which they were developed, while "failures" or unsuccessful services had clearly fallen short of their objectives or had been aborted late in the development process. Respondents rated the projects on each of 121 items: 104 items characterised the nature of the service itself and the NSD project, corporate fit, the market and internal environment, as well as the new service development process used by the firm; and 17 items gauged manager's perception of the extent to which the project had succeeded or failed in terms of one global and 16 specific performance measures. Project descriptors and performance indicators were measured in the great majority of cases using seven-point, agree/disagree (Likert) scales. The data was collected in three waves: a personally addressed mailing to all managers in the 184 firms who had agreed to take in the study; a follow-up mailing after six weeks to all non-respondents of the first wave; finally a telephone call to encourage response. In total 148 managers in 115 firms completed the questionnaire (company response of 62.5 per cent), yielding 276 rated projects: 150 were successes; 126 had failed.

De Brentani's (1989) study covered a wide range of service industries, including: financial (banking, trust, insurance and other financial services), transportation and communication, management and marketing consulting, accounting, and computer and system firms. A substantial portion of the projects were of "professional" nature. For the purpose of the

present research, therefore, cases corresponding to what are considered to be industrial professional services were selected and a sub-sample was created. In total, 112 cases from 55 firms were examined: 18 computer and systems firms (38 cases), 17 marketing and advertising companies (27 cases), 14 management consultants (36 cases), and 6 accounting firms (11 cases).

3- Interviews with company managers.

In order to acquire field experience and an in-depth appreciation for new service development, the author conducted several exploratory interviews with managers in professional service firms. Five companies were involved, including: two marketing consultants, one management consultant, an engineering service firm, and a Canadian government service corporation. In each case, in-depth interviews were carried out with at least two managers. Interviewees were asked to choose a service their company recently introduced to the market and to describe what the NSD process was for this service. Other questions investigated service production, customer behaviour and relationships, and perception of competitors.

4- Analysis.

4.1- Descriptive dimensions of new service development.

It was necessary to reduce the 112 new service descriptive variables to a more manageable set of composite dimensions. This was achieved through factor (principal component - Oblimin rotation) and reliability analyses (Cronbach Alpha). "Oblimin"

rotation (i.e., factors are assumed to be slightly correlated with each other) was selected instead of the more usual "Varimax" rotation in order to ensure consistency of the principal component analysis with the subsequent LISREL analysis, which also hypothesizes correlations between constructs.

The principal component analysis involved several runs. All variables which were single-variable-factors were eliminated until each factor was loaded by at least two items. Only factor analysis was used during this step and this resulted in the deletion of 22 items. After this initial stage seven more iterations of factor analysis, but this time combined with Cronbach Alpha reliability analysis were carried out. As a result, 27 other variables were eliminated since these they did not contribute positively to the Cronbach Alpha reliability coefficient. A final run reduced the remaining 64 descriptive variables to 15 non-orthogonal (oblique) factors.

These 15 factors accounted for 65.7% of the total variation. Cronbach alpha (α) for 13 of the factors ranged from 0.6475 to 0.8410, which is in the minimum range (i.e., $\alpha \geq 0.5$) suggested by Nunnally (1978) for exploratory research. Although, two factors had Cronbach Alphas somewhat lower at 0.4015 and 0.4724, the results show that these dimensions are internally consistent and meaningful. Correlations between factors, as formed in the Oblimin rotation, were not higher than 0.19 in absolute value. Assuming that the threshold for a significant correlation is 0.3, the dimensions described here appear to be reasonably independent from one another (Norusis, 1988)

As expected, many of the dimensions derived from the factor analysis are similar to the constructs previously identified by researchers of new services (de Brentani 1989, 1992) and also of new physical products (Booz, Allen and Hamilton 1982, Maidique and Zirger 1984, Cooper 1993). This confirms the notion that developing and marketing goods and services imply similar activities. The results of this analysis, however, also suggest key professional service specificities. Almost all of the dimensions include one or more service related variable, and close to half (7 out of 15) of the factors can be viewed as pertaining almost entirely to a new service (as opposed to a physical good offering).

For purposes of discussion, the 15 new professional service descriptive factors were further classified into five major groups: proficiency in new service development, market characteristics, customer characteristics, nature of the service offering, and project synergy. These groups were created on the intuitive basis of the relationships among factors. The dimensions which are detailed in Table 5 are described in the following pages together with factor loadings and Cronbach Alpha coefficients.

4.2- Proficiency in new service development.

Two factors describe the firm's ability to develop new services. The first one, *Formal NSD Process* (F8), refers to the rules and procedures used by companies when they develop a new professional service offering. Projects rating high on this dimension had a very detailed financial analysis before the new service was moved to the design phase of the process. They also entailed activities such as in-depth market studies and a "blueprint" approach (i.e., identifying and planning for service elements and processes)

during the design stage. Market launch was detailed and documented and included a formal promotional program. The new service was also formally evaluated after commercialization to verify whether it met the initial set of planned objectives.

The second dimension describes the firms' *Effectiveness in NSD management* (F11). Services strong on this factor benefited from excellent communication among the different functional areas involved in the NSD process. Employees from different functional areas were often involved in the planning, the design and the launch stages of the process. Most companies also reported that for these projects, frontline personnel received extensive training about the new service. From a motivational point of view, top managers created a highly supportive innovation environment within the firm, and played a strong role in encouraging the NSD effort.

4.3- Market characteristics.

The second set of new service dimensions comprises two factors and describes the market environment for the new service offering. *Market competitiveness* (F3) refers to the nature of competition in the new service's market segment. Ventures loading high on this construct were developed for markets characterized by extremely aggressive competition and by similar competitive offerings. Competition in these segments is mainly based on price, and frequent service introductions or modifications can be observed. Results also show that typical professional services markets are dominated by one or two companies with large market shares.

In terms of *Market potential* (F13), the role of the new service often is to expand the current market and to capture more of a large dollar volume market. This is traditionally achieved through selling the new service to existing customers.

Table 5: New Service Projects Descriptive Factors

Factor name	Variables loading on factor	Factor loading
F1 Product/market fit ($\alpha=0.8410$)	Consistent with existing customer values/operating systems Fit in line with financial resources Responds to important changes in customer needs/wants Fit with sales and promotional capabilities and resources Satisfies clearly identified customer/client need Fit with marketing research capabilities and resources Customers similar to ones we already served	0.71252 0.60391 0.59016 0.58982 0.53583 0.47867 0.45391
F2 Equipment based service ($\alpha=0.8099$)	Production, highly equipment intensive process Required new or expanded equipment for behind-the-scenes process Required installation of new capital equipment at delivery level Quality of service delivery Improved equipment characteristics (e.g., user friendly, fast) Source of idea technology Customer contact during delivery strongly equipment-(7) vs people-based (1) Incorporates major facilitating equipment Quality, faster or more efficient service	0.74388 0.69542 0.67798 0.60646 0.58225 0.54011 0.49536 0.47270
F3 Market competitiveness ($\alpha=0.8152$)	Extremely aggressive competition Intense price competition Very similar competitive offerings Market exhibits frequent product introductions and modifications One or two dominant competitors with large market share	0.84360 0.74162 0.73690 0.66062 0.63118
F4 Service newness to the firm ($\alpha=0.7403$)	Class of service totally new to firm Improvement/modification of existing service Exploited technology totally new to firm Service production process totally new to firm Competitive environment totally new to firm	0.74326 -0.72362 0.68497 0.60760 0.53094
F5 Expert/people-based service ($\alpha=0.8043$)	Frontline personnel highly skilled (7) vs unskilled (1) Production uses skilled (7) vs unskilled (1) personnel Frontline personnel experts perform judgmental tasks Experts important in producing/creating service	0.86127 0.76505 0.69993 0.67568
F6 Service customness ($\alpha=0.7094$)	Quality more customized (7) vs more standardized (1) than before Customized service (7) vs standardized service (1) Service tailored to several well-defined market segments	0.79603 0.77662 0.50575

Factor name	Variables loading on factor	Factor loading
F7 Service superiority ($\alpha=0.8225$)	Better "service outcome" than competitors Unique benefits--perceived as superior to competition Better "service experience" than competitors Highly innovative service Gave firm important competitive advantage Strategy "follower" (7) vs "innovator" (1)	0.81456 0.78599 0.76514 0.51723 0.48255 -0.41873
F8 Formal NSD process ($\alpha=0.8093$)	Design incorporated in-depth market study Market launch documented and highly detailed program Market launch formal promotional program (7) vs word-of-mouth promotion (1) In-depth "financial analysis" preceded design stage Formal post launch evaluation procedure used Design used detailed "drawing board" approach	0.78823 0.75366 0.67510 0.63308 0.57946 0.56128
F9 Respond to demand cycle ($\alpha=0.7294$)	Role responds to variations in demand conditions Role uses firm's excess (or off-season) capacity	0.77968 0.72350
F10 Satisfaction with current service ($\alpha=0.7568$)	Customers satisfied with previous services Customers very loyal to existing service relationships	0.85442 0.79879
F11 Effectiveness in NSD management ($\alpha=0.7667$)	Development process suffered from poor communication among functional areas Employee involvement re planning design and launch not adequate We did excellent job in marketing service to own frontline personnel Top management created a highly supportive innovation environment Fit with current delivery system Top management did not play strong enough role	-0.72910 -0.68639 0.47056 0.46721 0.45196 -0.41581
F12 Long-term relationships ($\alpha=0.4724$)	Strictly commercial/industrial clients (7) vs. individual consumers Long term customer relations (7) vs one-time relation (1) Project management dominated by marketing (7) vs. operations (1), both (4) Customers "highly conservative"	0.70881 0.54657 0.52191 0.42361
F13 Market potential ($\alpha=0.4015$)	Role expands current market (more of present clients) Large dollar volume market	0.79545 0.50585
F14 Customer participation ($\alpha=0.7107$)	Customers participate extensively in producing service Production largely produced in direct contact with client	0.77321 0.74451
F15 Service standardization ($\alpha=0.6475$)	Standardized the behind-the-scenes production process Customer contact (delivery) became more uniform	0.78742 0.71844
Numbers in parenthesis Cronbach Alpha (α) construct reliability coefficients		

4.4- Customer characteristics.

The next group of dimensions describes customer behaviour and characteristics. Existing business clients are likely to be satisfied with previous services and tend to be very loyal to existing service relationships (*Satisfaction with current service* (F10)). Customers are also more inclined to engage in long-term service relationships with suppliers, and are highly conservative (*Long-term relationships* (F12)). The last descriptor of professional services markets is that clients participate extensively in producing the service and that the service is largely produced in direct contact with customers (*Customer participation* (F14)).

4.5- Nature of the service offering

Another set of dimensions identified in this analysis describes the nature of the new service developed by the firm. Two factors illustrate the "expert"- versus "equipment"-nature of the service production process. An *Equipment-based service* (F2) implies a production process that uses a lot of facilitating equipment. Customers deal more with machines (e.g., fax, computer, telephone) than with people during service delivery. Other variables such as the need to install new capital equipment for new service production, either at the delivery level or for behind-the-scenes process, and such as improving the friendliness or the speed of the existing equipment also describe the equipment-based character of the new service offering.

On the other hand, an *Expert people-based service* (F5) involves highly trained or highly skilled frontline personnel who deal with clients, as well as highly skilled employees who

produce the new service (in this case, the service is also produced in behind-the-scenes operations). Service providers are often experts who perform judgmental tasks when rendering the service, and who are important in producing or creating the new service offering.

Another sub-group of constructs defining the nature of the service offering includes *Service customness* (F6) and *Service standardization* (F15). These dimensions describe the "customized" versus "standardized" character of a new professional service. Projects rating high on the first factor are tailored to several well-defined market segments, or are adapted to each client, and/or have their quality enhanced through customization. On the other hand, new services that make the service delivery more uniform and that standardize the behind-the-scenes production process are said to be standardized. (F15)

A new service venture can also be described in terms of *Service superiority* (F7). Services strong on this dimension frequently offer not only a better service outcome, but also an improved service experience for customers than do competitive services. In other words, both the end result as well as the process for rendering the service (i.e., the service experience) is substantially improved. The projects identified with this factor also tend to be very innovative. They usually are of a pioneering nature and are either totally new to the market or replacing very inferior alternatives. Customers perceive these new services as providing unique benefits. They also perceive them as being superiors to those provided by competitive firms. Closely associated with this positive client perception is

the competitive advantage that firms gain from developing these types of professional service projects.

The last construct portraying the nature of the new service refers to the demand cycle of professional services (*Respond to demand cycle* (F9)). It appears that services loading high on this dimension were developed to respond to variations in demand conditions or to use a firm's excess or off-season capacity.

4.6- Project synergy.

A final set of two dimensions that were identified in this analysis pictures the synergy between the new service project and the different company resources and experiences. New services strong on the first construct (*Product market fit* (F1)) are market- and operations- oriented and are consistent with existing customer values and operating systems. They also respond to important changes in customer needs and wants or satisfy clearly identified client needs. In terms of fit with company resources, these projects are in line with the financial, marketing, and sales resources available in the firm.

Another descriptive project synergy factor refers to *Service newness to the firm* (F4). The projects portrayed here are not synergistic in that they are not simple improvements or modifications of an existing service. Instead, they belong to a class of services which is totally new to the company. To develop these projects, firms engage in new technologies, new service production processes, a new competitive environment, and new marketing approaches.

5- Determinants of New Professional Service Performance.

A key step in the analysis was to determine which of the NSD dimensions that describe new professional service projects (i.e., the result of the factor analysis) appear to be casually linked to project success or failure. The factor scores of the 15 dimensions were computed for each case and used as independent variables in a multiple regression analysis. The overall rated degree of project success/failure was the dependent variable. All managers had rated their services on this global performance measure, taking into account such concerns as revenue, market share, and competitive performance of the new service offering (de Brentani 1989).

A stepwise regression procedure was undertaken with a cut-off criterion for the entry of variables at $PIN \leq 0.1$. A stepwise procedure selects independent variables and includes them, one by one, in the equation on the basis of their partial correlation. This method allows the researcher to evaluate how much of the total variation is captured by each independent variable in the equation (Norusis 1988).

The multiple regression equation explains over 40% of the variability in the overall performance of new professional services ($R^2=41.4\%$) and is significant at the 0.0001 level. Possible outliers were investigated, but none were detected. Seven dimensions were found to have a significant influence on project performance. Of the 15 factors that describe new professional service projects, five were found to be highly significant in their relationship ($p \leq 0.01$) to the global measure of new professional service success. Two others could be considered as secondary factors ($p \leq 0.05$) in the performance equation. One final factor,

although not significant at the 10% level, was so close to the cut-off score (i.e., 0.1173) to merit comment. The results are presented in Table 6, Figure 2, and Figure 3.

5.1- Service Superiority.

The prime factor separating successful from unsuccessful new professional services (explained 34% of total variation) is *Service Superiority* (F7). Providing a better service outcome, a better service experience, and benefits that are perceived to be unique and superior by customers play an overriding role in determining the outcome of new service ventures.

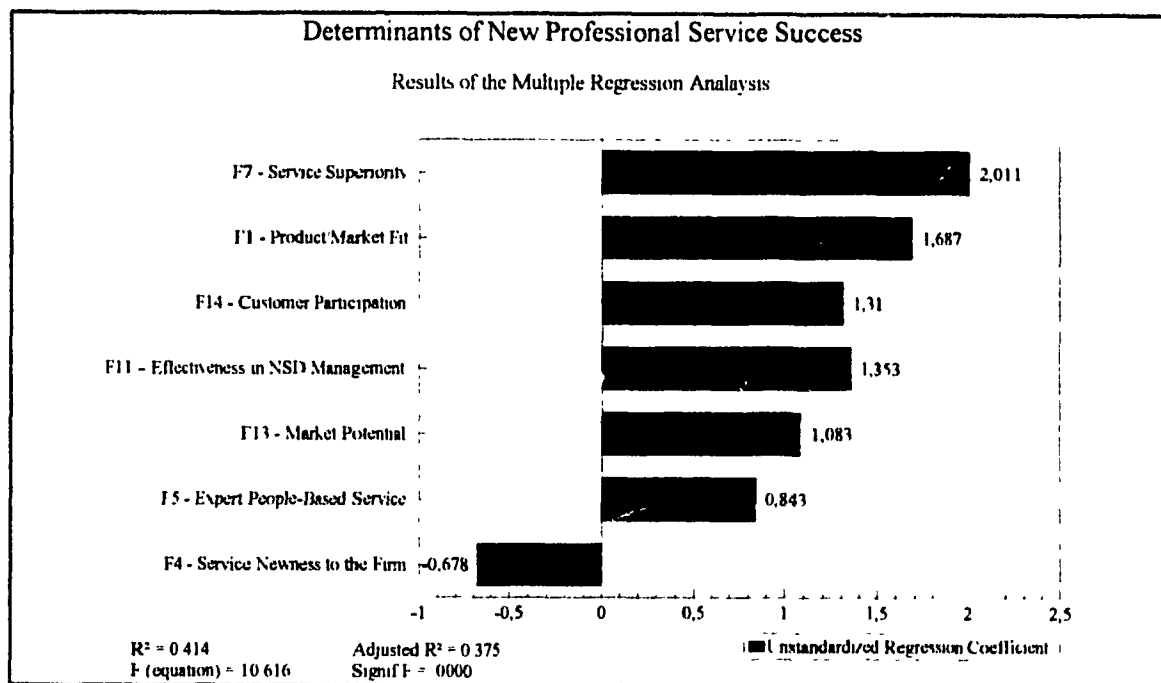


Figure 2. Unstandardized Regression Coefficients

This finding clearly is not very surprising. Not only does this result make sense but previous researchers have also identified service superiority as a primary determinant of

success both for new physical products (Booz, Allen and Hamilton 1982; Maidique and Zirger 1984; Cooper and Kleinshmidt 1987) as well as for industrial services (de Brentani 1989; Cooper and de Brentani 1991).

Interviews with managers further support this finding. All the interviewees believed that offering a superior service was the key, mainly because they were operating in highly competitive markets where services are easily copied. Providing customers with a better service experience or a better service outcome was considered to be a result of excellent service design. The engineering company related that it had won a major government contract because of service superiority. This firm could provide the requested service faster than competitors and met the exact specifications set by the federal government because the service was designed flexibly enough to meet different customer needs.

Clearly, professional service firms must develop new services that can give them an important competitive advantage. One manager said that providing unique benefits was "the only way for a consulting company to grow and to attract long-term clients". Gummesson (1981) states that it is difficult to compensate for service inferiority with hard selling or advertising techniques. The findings in the current study confirm that professional service companies need to take advantage of the close contacts they have with their customers to identify what customers perceive to be superior and to develop new services that respond to these requests.

Table 6: Results of the Multiple Regression Analysis

Table 6: Results of the Multiple Regression Analysis				
Multiple R	64376			
R Square	.41443			
Adjusted R Square	.37539			
Standard Error	3.39186			
Analysis of Variance				
	DF	Sum of Squares	Mean Square	
Regression	7	854 94337	122.13477	
Residual	105	1207 99468	11.50471	
F = 10.61607	Signif F ≤ .00001			
----- Variables in the Equation -----				
Variable	B	SE B	T	Sig T
F7-Service superiority	2.010857	.365100	5.508	.0000
F1-Product/market fit	1.686666	.375470	4.492	.0000
F14-Customer participation	1.309512	.343775	3.809	.0002
F11-Eff.NSD management	1.352972	.372985	3.627	.0004
F13-Market potential	1.082734	.361503	2.995	.0034
F5-Expert based service	.843359	.387164	2.178	.0316
F4-Service newness	-.678492	.347113	-1.955	.0533

5.2- Product/market fit

A second key dimension in the success equation for new professional services has to do with how the new service offering fits with the company's resources and experiences. *Product market fit* (F1) accounts for 14.7% of the variance in the performance of new ventures. New services that are consistent with existing customer values and operating systems, that respond to customer needs and requirements, and that fit the expertise and

resources of the company, are more likely to achieve a competitive advantage in the marketplace.

Similar to the service superiority factor, this finding is logical and not unexpected. Rothwell (1972), Booz, Allen and Hamilton (1982), Cooper (1979), and Maidique and Zirger (1984) all recognize this construct as a correlate of new manufactured product success. On the service side, de Brentani (1989, 1992), Terril (1992), and Martin and Horne (1993) also acknowledge that companies developing services which are synergetic both with the market and with company resources have higher performance results.

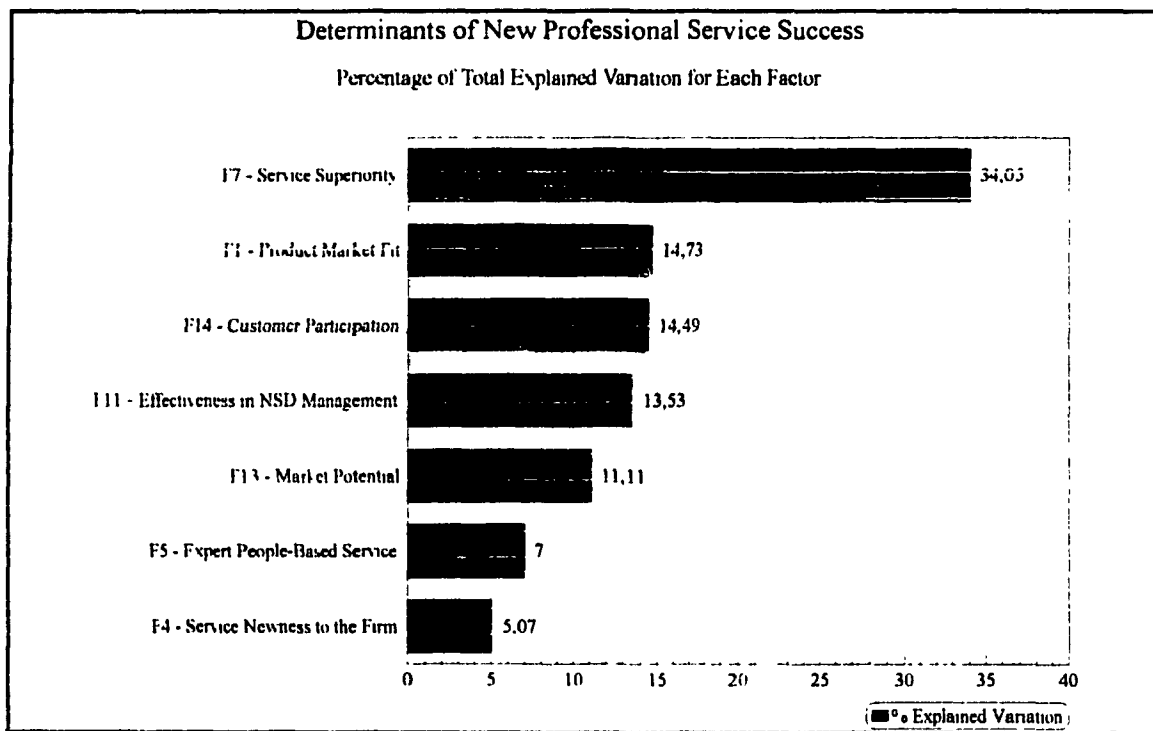


Figure 3: Explained Variation per Success Factor

Why is fit important for success? New services that match a company's experience and expertise tend to reduce not only the level of initial investment needed for developing the service, but also the number of errors occurring during and after the development phase.

As a result, these ventures have a reduced risk of failure (de Brentani 1992). Lovelock (1984) also argues that synergy helps companies in ensuring long-term relationships with their clients through better customer contact and better handling of problems

Interview results confirm that a good product-company fit is vital to service success. However, according to service managers, this fit is often automatically implied in new services they undertake to develop. Since professional service companies base their offering primarily on their skills and expertise, they have to stick close to what they know and what they are known for in order to be able to carry out the work successfully.

For example, a marketing consultant said she "made a very costly mistake when [she] tried to offer a management type consulting service to one of [her] clients". After a few interventions in the client company, the buyer, a big agro-food company, realized that she was not the most capable person to perform the required task. The client cancelled the contract. This person then faced a lot of difficulties to get new "marketing" consulting assignments with other agro-food companies. She concluded the interview by saying that professional service marketers should recommend clients to other companies when they are not able to perform a task. She added that "although this means lost business in the short term, it adds credibility and seriousness to the company in the long run".

Another interviewee said that new services should fit with the company's reputation in order to be successful. Because of intangibility, customers often base their buying decision on the reputation of the professional service company. It is, therefore, important to develop new services for which the company is recognized as an expert.

5.3- Customer participation.

Customer Participation (F14) ranks third in importance when related to new professional service success (14.5% of variation). In other words, services that extensively involve customers in their production, and that are produced in direct contact with clients tend to be more successful than others.

When compared to previous service or product success/failure studies, customer participation is unique in its association with professional services. As suggested by Gummeson (1981), customer participation is important in producing a professional service mainly because clients usually bring information that is essential to service production. For example, according to Maister and Lovelock (1982), the diagnostic stage of the service production process (i.e., evaluation of client needs) is strongly linked to good service performance. At this point of service production, customer participation is maximum and it is crucial to have good contacts between customers and service providers. This will ensure that customers do not retain useful information or that they offer it to the service provider at a late point in the service production design process. Managers who took part in the interviews also confirmed this point, choosing service providers who have a strong commitment to the buyer's industry and who have an excellent knowledge of problems typically faced by this type of customer.

5.4- Effectiveness in NSD management.

Effectiveness in NSD Management (F11) is the fourth performance factor (13.5% of variance) in the professional service success equation. Successful ventures tend to

originate in organizations where innovation is supported, where employees and top managers are highly involved in the development process, where the different functional areas communicate with each other, and where frontline personnel is trained before the new service is introduced to the market.

Both new physical product (Rothwell 1972; Cooper 1993) and new service (de Brentani 1989, Martin and Horne 1993) researchers have identified this dimension as linked to new product performance and it is also a key finding for professional services. De Brentani (1989) found that projects that do not receive enough attention during the development process are not likely to reach their sales and competitive objectives. To guarantee customer satisfaction, companies must ensure that different functional levels (experts, frontline personnel, system designers) are actively involved in the development process and that they communicate adequately (Shostack 1984, Easingwood 1986). These interactions help to improve new service design, and services are likely to have a better fit with customer needs.

Managers in the field (interviewees) recognize that it is important to give support to employees who take care of the development. They also think it is their role to ease the communications between the different functional areas.

The in-depth interviews, however, suggest that there is a difference between small and large companies in how new service development is managed. In small firms, new service development is mostly undertaken by top managers during their idle time. The fact that ongoing projects are a priority for this type of firm explains the relatively small

consideration given to new service development in small companies. A marketing consultant admitted that developing new projects was something like a hobby for him. On the other hand, larger firms tend to use a more formal approach to developing new services (i.e., Formal NSD Process, F8). Although this factor was not significant at the 0.10 level, it was very close to this cut-off score, suggesting some importance in the success equation. this will be discussed in greater detail below.

Two of the companies interviewed had recently hired personnel to specifically take care of their new service project. In these cases, innovation was strongly supported by top management and development was faster than in the other situation. This resulted in an increased competitive advantage for the company.

5.5- Market potential.

The fifth factor separating successful from unsuccessful new professional services (11.1% of variance) is *Market Potential* (F11). The desire to expand the current market (more of present customers) and to enter a large dollar volume market both lead to positive new product performance. This finding was found to be a major cause of new product success in many studies of manufactured goods (Cooper 1979, Maidique and Zirger 1984, de Brentani 1986) and service studies have also identified market potential as a significant success factor (de Brentani 1992, Martin and Horne 1993).

Surprisingly, this performance factor was not always cited as a major determinant of success by service managers. Only the engineering company and a large marketing consultant carried out an in-depth assessment of the market potential before deciding on

whether they should pursue a particular new service development. Management consultants said that market potential was not thought of as a cause of success because new services were often developed in response to a particular client's request. Most of the time, selling the service to this unique client was enough to cover the development costs and to get a small financial profit. In this case, the perishable characteristic of services is turned to an advantage for the company in that the service could be rendered although it was not "in stock". Another consultant argued that some new services he developed had promotional goals, such as increasing customers awareness about the company. In this case, there was no direct need for the service to deliver profits or to reach a certain market share.

5.6- Secondary factors.

Two other factors that were causally linked to new professional service performance, were significant although of secondary importance ($p \leq 0.05$). First, new professional services that have a strong involvement of experts or skilled persons during the production and delivery process are more likely to succeed in the market (*Expert People-Based Service* (F5)). The expert/people dimension is characteristic of the service industry and was identified in the broader study by de Brentani (1989, 1992) as a correlate of new service performance. Since in the case of industrial professional services, expertise is a basic characteristic describing most of the service offerings, hence this factor is less significant in distinguishing between successes and failures.

A justification and confirmation for the relative impact of the expert/people construct on performance is that professional services depend principally on the skills and expertise of the persons who produce them (Gummesson 1981). Moreover, professional service clients often have the choice between performing a given function by themselves and buying an expert service to perform the same function. Since outsourcing is very frequent for complex functions (Jackson and Cooper 1988), professional services that are strongly expert-based and that solve a real client need are more likely to perform satisfactorily. The other construct (*Service Newness to the Firm* (F4)) has a negative influence on new professional service performance. New services involving new technologies, new processes, new competitive environments, or new marketing approaches to the firm tend to have a lower probability of success in the market place.

The newness dimension could be associated with the "project synergy" dimension discussed above. Companies tend to develop new services that are synergistic with their resources and experiences. First, since professional companies have expertise in one or a few areas, it is often difficult for them to move to new sectors of the industry without incurring large risks of failure. Also, because company reputation is crucial not only for searching new assignments but also in the client process of choosing a service provider, companies entering new markets are less likely to succeed. One of the marketing consultants interviewed said that his company was more likely to adopt new services requiring similar expertise to the one necessary for other existing services mainly because it reduces risks and costs.

Another reason for not developing new-to-the-firm services is that professional service companies mainly sell expert skills and time. A new-to-the-firm service means either hiring a new expert or training an existing one to get the necessary specialization. However, both of these actions also mean spending time to acquire the skills needed to perform the new service. This creates a problem because the time spent for specialization is not used to produce existing services. According to a manager interviewed in the engineering company, this often represents a large opportunity cost to the firm. Therefore, in order to keep enough of current business, professional service companies are somewhat forced to develop new services that use their current competencies.

5.7- Factors not part of the success equation.

Eight factors were not part of the success equation in this study of new professional services. Developing a new service for an extremely competitive market (*Market Competitiveness* (F3)) was not found to be a significant performance feature. However, since in the case of industrial professional services, highly competitive markets is a common characteristic describing most of the service offerings, this factor is less likely to be significant in distinguishing between success and failures. In addition, referring to the importance of the "service superiority" dimension described above, it makes less sense for companies to undertake the risk of developing new services either to compete on price or to offer products that are similar to competition.

Table 7: Factors not Part of the Success Equation

Variable	Beta In	T	Sig T
F2-Equipment-based service	-2 100E-04	- 003	.9978
F3-Market competitiveness	-.026142	- 345	.7305
F6-Customness	.044836	.570	.5702
F8-Formal NSD process	.118930	1.579	.1173
F9-Demand cycle	.003100	.040	.9678
F10-Satisfaction with service	.030361	.400	.6900
F12-LT relationships	-.021807	-.287	.7748
F15-Standardization	9 437E-04	.012	.9901

A group of four factors depicting the nature of the new service also had no significant influence on new service performance. Services that are equipment-based (F2), customized (F6) or standardized (F15) and service's ability to respond to variations in demand cycles (F9) were not correlated to project success. This might be due to the nature of professional services. Very few of these services are standardized in the sense that they are not produced exactly the same way for each customer. Also, professional services mainly involve experts who perform judgmental tasks, thus reducing the possibility to extensively use equipment in the production process. Moreover, according to interviewed managers, responding to demand cycles is not really a problem in professional service firms because a large percentage of the work can be sub-contracted in case of demand peaks (e.g, accounting firms). However, even if this is not considered to be a problem for medium to large service companies, it may be one for individual consultants who take the sub-contracts.

Another set of two non-significant dimensions is related to customer behaviour. The extent to which customers are satisfied with previous services (F10) and long-term client relationships (F12) do not appear to have any significant influence on new service performance. This is probably due to the fact that most professional services tend to involve longer-term rather than shorter-term relationships, especially in the case of consulting jobs. Moreover, interviews revealed that although customers often use past relationship with the service provider as an important criterion in their buying decision, nevertheless, this factor has a relatively small importance in light of purchasing a truly superior service. Clearly, if a new service is vastly superior, past relationships and loyalties are not too relevant.

The last non-significant dimension describes the use of a *Formal NSD Process* (F8). On first glance, this finding is surprising because most previous studies identified this factor as linked to performance both for manufactured goods (Cooper 1979; Booz, Allen and Hamilton 1982) and, to a lesser degree, for industrial services (de Brentani 1989, Terril 1992). It is well known from the literature (Shostack 1984) and the interviews also showed that because of their relative small size, professional service companies usually do not use formal NSD processes. Nevertheless, depending on the time they have to develop the service, they informally follow most of the steps included in these processes. One manager stated that her company usually creates new services in collaboration with a friendly client firm who agreed to pay less if it got involved in testing the new service. In this case, both parties benefited from the experience: the service company gained an

opportunity to develop and to test a new service, and the client benefited from reduced rates and usually from good service quality.

It should be noted that the significance level of the "Formal NSD Process" dimension ($p=0.1173$) is very close to the 0.10 cut-off point used in the stepwise multiple regression analysis. Although this significance level is low, there is some indications that the small number of companies who do use formal NSD processes tend to launch more successful new services. If companies could put more effort to develop and to use such processes, they probably could improve the performance of their new services. In any case, future research would be needed to explore this dimension more in depth.

6- Confirmatory factor analysis.

The last step of the analysis procedure was to draw a confirmatory model of the dimensions identified with factor analysis. From a methodological point of view, confirming the descriptive dimensions of new professional service development is crucial to the present research. In effect, confirmatory factor analysis significantly enhances the methodology (i.e., factor analysis and multiple regression) used by de Brentani (1992). It will provide stronger results with better internal validity.

Confirmatory factor analysis (CFA) was run with LISREL. LISREL is a software analyzing linear structural relationships. Compared to a classical factor analysis, CFA, through LISREL, gives more freedom to researchers when they test marketing models. Constraints can be set on factors and on variables much more independently than with factor analysis. For example, a researcher could hypothesize correlations between certain

dimensions and no relationships between others. In classical factor analysis this would not be possible: either the factors are all orthogonal or all correlated.

Initially, the confirmatory factor analysis was undertaken with the complete set of factors and their related descriptive variables (15 factors and 67 variables). This model was not significant, mainly because the large number of variables implied too many error terms and too many possibilities for each variable to load on more than one factor at a time. It was then decided to test a reduced set of factors and variables. The seven factors that proved to have a significant influence in the multiple regression analysis were included in a new model with their three (or two) top loading variables (19 items in total). This second model did not fit. One of the dimensions (F13: Market potential) decreased the goodness of fit index because its descriptive variables could have load on other factors. This was not really surprising. This factor had a very low reliability coefficient (Cronbach alpha=0.4015) and was therefore a weak descriptor of new professional service projects. This dimension and its two variables were deleted and a new six factors model was created.

This third model grouped 6 factors and 17 variables, and reached a satisfactory goodness of fit index (see Table 8). However, it could be technically improved by deleting another dimension (F14: Customer participation) described by only two items that could possibly load on other factors. The modification indices showed that these items could have depicted customer participation and service superiority (F7), simultaneously.

Once the "customer participation" dimension has been dropped, a last model including the five remaining dimensions and their 15 descriptive variables was tested with LISREL. This model had a significant goodness of fit index (see Table 9) and therefore confirmed the factor analysis conducted in the first phase of this investigation for these five dimensions.

Table 8: Six Factors LISREL Model	
Factors:	Descriptive variables:
1- Service Superiority:	Better service outcome Better service experience Unique benefits
2- Product/market fit:	Fit with financial resources Responds to changes in customer needs Consistent with customer values
3- Service Newness to the firm	Class of service totally new to the firm Improvement of existing service (negative) Technology totally new to the firm
4- Expert/People Based Service	Highly skilled/trained frontline personnel Experts perform judgemental task Production uses trained/skilled personnel
5- Effective NSD management	Excellent communication during NSD process Highly supportive environment Service marketed to frontline people
6- Customer Participation	Produced in direct contact with customer Customer participates in producing service
Chi-Square with 104 Degrees of Freedom = 115.27 (P= 0.212)	
Goodness of Fit Index = 0.896	
Adjusted Goodness of Fit Index = 0.847	
Root Mean Square Residual = 0.064	

Despite a less significant technical fit, the 6 factors model seems to give a better confirmation of the factors describing new service development projects in professional service firms. Results show that service superiority, service newness to the firm, product/market fit, expertise of service providers, effective NSD management, and customer participation are reliable descriptors of new professional service ventures.

Table 9: Five Factors LISREL Model		
Factors:	Service Superiority	Service Newness to the Firm
	Product/market fit	Expert/people Based Service
	Ineffective NSD Management	
Chi Square with 80 degrees of freedom = 76.07 (P= 0.604)		
Goodness of fit index = 0.921		
Adjusted goodness of fit index = 0.881		
Root mean square residual = 0.059		

Results in future research on the same database, or on a similar one, could be improved by testing a full LISREL model instead of conducting only a confirmatory factor analysis. A full model would include the relationships between the descriptive variables and the performance factors, but also the links between the factors and the success/failure variables. In this case, it was hardly feasible because the dependent variable used in the multiple regression analysis was measured by only one item. However, the other performance measures of the database could be used to form a "performance" construct that could be used as a dependent variable in a linear structural relationship model.

VII- SUMMARY AND CONCLUSION.

1- Summary of the results.

The objective of this study was to identify the dimensions that influence the success and failure of new business-to-business professional services. The statistical analysis was conducted on a sub-sample of new professional service projects from a broad empirical study on new industrial service development (de Brentani 1989). In total, 112 cases from 55 firms were examined. Each project was rated on 104 variables and 17 performance measures.

Identifying the constructs that describe new service development in the context of professional services was the first step necessary in order to achieve the goal of this study. An oblique factor analysis of the variables suggested that 15 dimensions describe the new product domain of professional service ventures. These factors were further classified into five major groups of dimensions. The first group depicts the firm's ability to develop new services through the use of a "formal NSD process" and by being effective in their new service development management. The second set of new service dimensions portrays market environment for the new service and incorporates "market competitiveness", and "market potential". The next group of dimensions refers to customer characteristics with factors such as "satisfaction with current service", "long-term relationships" and "customer participation in service production". A fourth set of constructs identified in this analysis describes the nature of the new service offering in terms of "equipment-based" versus "people-based" service delivery, of service "customization" versus "standardization", of "service superiority", and of service ability

to "respond to demand cycles". A final group of two dimensions pictures "project synergy" and "service newness to the firm".

Step two of the analysis involved the multiple regression of the rated degree of success or failure of the new service project on the 15 descriptive factors. The results show that five of these factors have a major impact on new professional services performance with two other constructs having a significant, but secondary, effect. Not surprisingly, new services that are superior to competitive products, that fit company's resources and experiences, that extensively involve the customer in their production process, and that are targeted at markets with good potential are more likely to succeed. Moreover, effective management of new service development is also a critical determinant of success. Of lesser importance, but still to be considered by service developers is that new-to-the-firm professional services tend to be less successful and that service production processes should use experts or trained employees to produce and deliver the service to customers.

2- Reliability and validity of the results.

Reliability for each of the 15 factors identified in the initial principal component analysis was assessed using Cronbach Alpha values. Except for two of these dimensions, the reliability coefficients were found to be satisfactory, according to Nunally's (1978) minimum value of 0.5 for exploratory research. The constructs examined in this study, therefore, generally show internal consistency.

Furthermore, the results of the oblique factor analysis not only make sense on an intuitive level but were also confirmed via the LISREL factor analysis. Despite different analytical methods (i.e., oblique factor analysis and LISREL instead of orthogonal factor analysis and case studies) the results presented here are also consistent with de Brentani's (1989, 1991) earlier analyses. Moreover, past new service studies show that similar dimensions both describe new service projects and influence new service performance (Gummesson 1981, Easingwood 1986, Lynn 1987, Martin and Horne 1993).

The literature on the success and failure of new manufactured goods also confirms most of the present findings (Booz, Allen and Hamilton 1982; Maidique and Zirger 1984; Cooper 1993). Nevertheless, as expected, the results reflect the service-specific nature of the data set. Lastly, and most importantly, is the fact that interviews with managers in professional service firms clearly support the results of this analysis. Interviewees, when asked to speak freely about what, in their firm, is driving new service performance, frequently referred to many of the concepts which were identified in the current analysis. Clearly, findings of the present study appear to be valid and relevant to the domain of new professional services. Not only do the descriptive dimensions seem to give a reliable picture of the new service projects analyzed in this study, but also those factors which determine success were confirmed by both results from previous research and beliefs of managers in the field. Due to the empirical nature of this study, it can reasonably be hypothesized that these findings could be applied to real life situations and that they might be used by service developers to create new services that will achieve better performance results.

3- Managerial implications.

The empirical results presented in this report suggest that service managers and developers can impact new service performance. The seven key factors that separate winner from loser services can, therefore, give some indications about the directions and approaches service developers might take to develop successful new professional services.

A discussion about these implications follows.

Product superiority is a key factor.

Although service superiority would appear to be an obvious feature underlying any new service development effort, results show that it is a key distinguishing factor between successful and unsuccessful projects. In other words, it is clear that only a few service companies focus on developing and marketing truly superior products.

Product superiority was found to have an overriding impact on new professional service performance. Companies should look for new services that offer unique benefits to customers, that provide better value, and which are of higher quality than competitive offerings. According to the interviews conducted with managers, superior products are the only way to ensure a professional service company's growth and survival.

When the proposed new service is not superior to competitive products, its odds of success are low. Consequently, the service firm spends valuable resources (i.e., time and money) to develop a product that will most probably fail, or that will not return enough revenue to the firm because it cannot be differentiated from competitive offerings. These lost resources might have been better spent on another project.

Interviewed managers proposed two other techniques to achieve product superiority. First, the professional service firm should conduct market studies in order to determine what "value", "benefits" and "service quality" are to customers. Results from these market studies will help the service company to achieve a better service design that will respond closely to customer expectations. A second way to develop superior services is to involve a "friendly" client into the development process. When a customer participates actively to service development, product superiority is likely to increase since the new service will incorporate the essential features a client could request when buying the service

Companies need an innovative culture.

Results of this study suggest that new service projects developed by companies that have a strong new service development culture. Successful ventures tend to originate in organizations where innovation is supported, where employees and top managers are highly involved in the development process, where the different functional areas communicate with each other, and where frontline personnel is trained before the new service is introduced to the market.

Being effective in managing service development might help companies to develop superior products in the sense that more information is available, from different sources, to professional service developers. Therefore, the likelihood of creating a new service that takes into account the trends of the market place, customer desires, and the competitive position of the service company on the market, is improved.

It should be noted that developing a NSD culture requires time and effort from every single person working for the company. However, firms usually benefit from such a culture in the long-term since it is one of the most important way to stay in touch with the customers and to develop new products that are truly market oriented.

High degree of product/market fit is essential.

Product/market fit implies that the new service is designed to serve market needs and to fit with marketing capabilities of the firm. Similar to the superiority factor on first glance, it seems obvious that firms should develop new services that have a substantial potential market and that the firm's personnel will easily be able to deliver to customers. However, her too, results show that many companies are not fully aware of the importance of project fit as an overriding feature in their new product development efforts.

Since professional services principally depend on the skills and experience of the people who deliver them, if a new service lacks synergy, then these delivery skills and resources are likely to be deficient, resulting in an inferior product and a dissatisfied customer. Also, because customers usually evaluate a service firm partly on its reputation, offering new services that fit with the skills and expertise for which the company is known will be less disorienting for potential customers, therefore reducing the marketing cost of getting new assignments and improving the chances of selling the service.

Two implications can be derived from this result. First, in order to assess project fit with market needs, marketing research should be conducted to discover what customer needs and wants are. This research should be an integral part of new service development and

should be used not only to check for market acceptance, but also as a key input into service design. Second, in order to evaluate project fit with company resources, service developers might find it useful to develop a check list of screening items based on the variables presented in Table 5. This list will help them, early in the NSD process, to select projects that are more likely to fit with existing resources and therefore to avoid spending resources on projects that are more likely to fail.

4- Differences in the professional service success equation.

A primary objective of this study was to focus specifically on the business-to-business professional service sector. This was to develop insights and test hypothesis about possible differences in this sector as opposed to new product development in industrial services, in general. The findings suggest certain similarities, but also some differences. Except for one performance factor (i.e., responding to demand cycles), all the findings hypothesized in part five of this report have been confirmed by the statistical analysis of the database. In other words, not only are many of the results similar to the ones identified in previous new service development research, but most of the determinants of new service success also rank in the same order as in de Brentani's (1992) success equation¹. Hence, much of what has been said about industrial service success can also be generalized to industrial professional services.

¹ It should be noted that de Brentani's (1992) analysis used the "service superiority" variables as performance measures instead of descriptive variables of new service development, thus explaining the fact that there is no "superiority" dimension in her success equation.

One new dimension was identified in this study of industrial professional services. The fact that customer participation (F14) is related only to professional services and did not emerge as a relevant descriptive or predictive factor in previous new service studies can be explained by the fact that problem-solving forms a key element of most professional services. This implies that customer participation in the service planning and production process is absolutely essential in order to provide necessary information to the service company.

The present results also indicate that the "formal NSD process" (F8) factor is not significantly related ($p > 0.10$) to new professional service performance while de Brentani (1992) identified it as an important determinant of success. Because professional service companies are usually small and the services highly expert-based and problem-oriented, it makes sense that a formal NSD process is not called for. Counting more on an innovation culture within the firm and on lots of interaction among specialists and clients helps to ensure greater flexibility and success for new professional service products.

The present findings also differentiate the professional service success equation from the more general industrial services success equation in that "product/market fit" (F1) and "market potential" (F13) are two distinct dimensions. In de Brentani's (1992) performance equation, only one factor described these two dimensions. This distinguishing feature of professional services might reflect the fact that, because of the close contacts between buyers and sellers, understanding customers and responding precisely to their needs is a major concern of professional service companies.

A last comment is that the "quality evidence" factor identified by de Brentani (1992) as a major determinant of positive performance, did not emerge in the present analysis as a descriptive or a determinant dimension of new professional service ventures. Because professional services are advisory in nature, involving extensive expert client contact, customers have a chance to evaluate the quality of the service before it is delivered to them. According to the interviews, professional service firms usually write a proposal about the potential solution to the customer problem, and only if the customer agrees with this solution, is the service is produced in its entirety. Hence, using this "proposal" method clearly reduces the need for providing customers with physical evidence of quality.

5- Limitations and recommendations for future research.

During the interview phase of this study, a few managers expressed concerns about possible differences in success factors among different types of professional services. For example, some services can only be provided by experts who have a very specific educational background (e.g., chartered accountants, lawyers). This type of specialization might bring some modifications in the dimensions that influence new service performance. For example, in the case of chartered accountants, the "expert/people based" factor may not be significant in the success equation since chartered accountants are all experts who received the same training. As a result, a first recommendation for future research would be to create sub-groups of professional services that tend to have similar characteristics and to examine the performance factors for each of these sub-groups. This was not

possible in the present research because the sample was too small and too heterogeneous to be split. A larger and more homogeneous sample that captures professional service specificities, such as required certifications or customer-expert contact, would therefore be needed to achieve such an objective.

Another concern raised by this study is that the data analyzed here was collected in 1988. At that time, the economy was not recessionary and the technology involved in the "information highway" was not yet as advanced. However, in 1994, the conditions have changed and both the economic and technological evolutions might have influenced the way companies develop new professional services. For example, two marketing consultants said that since 1991, the competition in their markets has changed. Although service superiority is still a main criterion in customers' buying decision process, these managers argued that price became almost as important. We can also imagine that in a near future, professional services will be rendered to customers via several electronic devices (e.g., expert on-line systems) and that there will be no more face-to-face communication between the client and the service provider.

As a result of these changes, it could be expected that factors such as "service value to the customer", or "equipment-based service" gain some importance in the success equation. Future studies would therefore need to collect new data that would capture these changes by including new variables such as "price perceptions of the customer" in the survey instrument.

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