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Customer Satisfaction and Loyalty in After Sales Service: Modes of Care in Telecommunications Systems Delivery

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ABSTRACT

The study was to gain improved understanding of the forces and factors present in after-sales activities, and the role of these in enhancing or endangering business. The objective was to gain a better understanding of how a supplier could successfully manage its “customer care” activities in the dynamic mobile telecommunications market. After sales business activities in this industry have received little systematic research attention. The study described herein focuses on after sales aspects of business-to-business activities in the mobile telecommunications industry, with the emphasis on sectors that provide service. The method of study primarily relied on the case study approach. Some aspects of qualitative and action research methods were integrated into the formal study process. The study consisted of study and analysis of five in-depth cases. Qualitative and quantitative information and data were collected from each of the persons interviewed in the supplier and customer organisations.

The term, “care” is used extensively in the study as a doorway into the world of after sales activities as well as an organising construct for interpreting what was found. The concept of care includes activities related to maintenance and preventive maintenance. It additionally includes services that can link back to help enhance pre-existing capabilities for delivery of products or systems. Processes and measures of customer satisfaction and loyalty provide two critical aspects of the study.

The importance of the concept of care and the actions that define it were found to be critically important for a customer’s total satisfaction. The importance of the care phase in the total customer process was found to increase as the customer relationship matures. Different services offer different characteristics and challenges, while for many customers, their satisfaction-loyalty relationship with a provider tends to be non-linear. The relation between customer needs, satisfaction, and loyalty, and how these ultimately relate to a providing firm’s profitability, were seen to be linked in complex ways. The complexity can be studied in many ways but herein the customer satisfaction-loyalty of each service event was first evaluated separately. Customer satisfaction and loyalty were then related to each other in order to compare the separate and combined characteristics. This provided the reference basis for analysing and forecasting how a customer’s behaviour might change relative to their level of satisfaction. While the determinants from these evaluations present evident limitations, they were additionally found to provide a basis for better mapping the more systemic interactions between the many possible kinds of behaviours and levels of satisfaction.

The study presents information as to how communication between the supplier and its customers was organised. Based on this, it was hypothesised that, as the relationship between the supplier and customer matures, the interactions become more specialised around specific activities. Managers, on the other hand, were seen to give ever-greater emphasis, in terms of their perceptions, to their arena of activities. For example, the service manager and project manager emphasised certain specific parts of a total project while an account manager would tend to emphasise those aspects most closely related to contact-based relationships. This was seen to allow emphasis on service to be given in terms of modern functional management systems instead of the dynamic reality of the situation. This was seen to present significant challenges to an integration of different perceptions of different yet related functions. This was identified as an area of focus for providing more complete and consistent customer care. This led to the creation of a new conception of the nature of the service manager, which could be extended to the entire supplier company. This work, carried out to implement this idea, illustrates that there is a great, unrealised potential, particularly in the creation of a viable model of after sales customer care able to accommodate the complexity of contemporary business development.

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1 INTRODUCTION

The first chapter introduces the background to the research. Briefly, the motivation for the study is justified. Issues related to managing high technology markets are discussed. Life cycle theory is additionally introduced as one of the central themes of the present study. The concept of business process reengineering is briefly covered, together with an overview of the aircraft and health care industries. In addition, research theories, objectives, and scope of the study are specified.

1.1 Background

Services have been studied extensively since 1980s. The idea of linking service value and customer satisfaction has existed for a long time. Customer satisfaction has been studied and recognised as an important factor in the management literature for the past few decades. Studies indicate that there are links among customer satisfaction, customer loyalty, and profitability. During recent years, there have been studies that have established mechanisms that attempt to link customer satisfaction and customer loyalty. Many studies additionally attempt to establish connections between service quality, customer satisfaction, customer loyalty, and profitability (Grönroos, 1978, Grönroos, 1980, Grönroos, 1982, Parasuraman *et al.*, 1985, Reichheld and Sasser, 1990, Sewell and Brown, 1990, Jones and Sasser, 1995, Heskett, 1997, Anderson and Mittal, 2000).

Many studies related to customer loyalty during the 1990's have been conducted in the area of consumer markets. Such studies have frequently concentrated on such topics as relationship marketing, but only a few studies have concentrated on business-to-business markets. Even though there are many studies in the area of services, after sales services and after sales activities generally have represent an overlooked area of the management literature and only a few researchers have paid attention on it. For the most part, issues related to after sales activities and after sales services have been given only partial attention in those studies.

Nevertheless, the importance of after sales service can be significant to customer satisfaction, particularly in the business-to-business environment, if the customer's capital expenditure on the equipment is significant, as is the case in mobile telecommunications. It is expected that the importance of well-managed services in after sales phase, i.e., care phase will increase, particularly in environments where high capital investments are required and such investments are made over longer periods of time. Grönroos (1980) noted that academics and practitioners at the time were not paying very much attention to the service marketing issues. Lele and Karmarkar (1983) claim that product support is a business opportunity for many companies.

The present study concentrates particularly on the following issues in detail through four extensive case studies and a further superficial case study. Its foundation is in the project-based industry in business-to-business environment. The studied issues are all related to the supplier's new way of managing after sales phase in a typical project environment. Wikström (2000) concludes that projects and project-based companies need to be analysed and understood as open systems that are affected by larger entities. Project theory is continuously affected by arising phenomena that might have an evolutionary pattern. Both project and service managers could benefit from managing better the traditional interface between the project and operation phases (Kezsbom *et al.*, 1989, Rehn and Wikström, 1999, Wikström, 2000). In the study, particular emphasis is put on studying the appropriateness of the established service manager concept and its impact on customer satisfaction and customer loyalty. Firstly, the interaction internally in supplier and customer organisations and between customer and supplier are studied in the after sales to discover if there are differences in the activity of different persons and their roles. Furthermore, the study discusses the impact of care phase on global customer satisfaction. With regard to the care phase, the degree to which customers' needs change as a function of time related to the importance of the individual services to the customers is also studied. These relationships are then related to individual services and customer satisfaction and loyalty and, on the other hand, to the supplier's perception of the customer's satisfaction and loyalty.

The Juran Institute found that less than 30 per cent of surveyed persons believed that their customer satisfaction "management" efforts added economic value and less than two per cent were able to measure a bottom-line improvement as a result of increased customer satisfaction levels. Customer satisfaction survey questions are not designed to measure loyalty, i.e., how the customer will behave (Hepworth and Mateus, 1994). In a survey by Deloitte across different industries, it was found that companies that set goals for improving customer loyalty were 60 per cent more profitable and more likely to exceed growth plans than companies that did not have such a good strategy (Saunders, 1999).

Most managers assume that there is a positive correlation between customer satisfaction and customer buying behaviour. This correlation is unreliable; higher satisfaction levels do not necessarily result in more sales and higher margins. One reason for this could be that people use such surveys as a means to communicate desires beyond their sufficient needs. According to the Juran Institute, in more than 70 per cent of business cases, price ranked among the most important factors that customers were not satisfied with. As regards customers who changed supplier to a competitor, only 10 per cent of those interviewed had changed supplier because of the price (Griffin, 1995).

Griffin (1995) found that, even when people claim to be satisfied in customer satisfaction surveys, 85 per cent of them are still willing to change supplier. One of the reasons could be the difficulty to accurately and reliably measure customer satisfaction. The customers typically fill the customer satisfaction surveys. There are several ways of inflating satisfaction ratings, including the formation of questions, timing of the measurement, and the mood of the respondent. Since customers tend to overrate their satisfaction in these surveys, the reliability of satisfaction surveys as predictors of repeat purchase can be questioned.

1.2 Managing and Marketing High Technology

High-technology markets can be characterised by continuous and rapid change of the markets and short life cycles of products. In high-technology companies, technology is a key element of the business. The objective of a strategy is to deliver value to the customers in order to provide required returns to the shareholders and employees. Frequently, the organisational structures of high-technology companies are complicated, as these organisations must be capable of developing new products and services that can be produced at reasonable cost (Riggs, 1983).

From the customer's point of view, the reason why a product is not as good as another is simple – companies fail because they are unable to deliver total customer satisfaction. Without new products or services a company cannot endlessly satisfy customers' high-tech needs. Attacks against the market leader normally come from a follower or a new market entrant using a new technology (Porter, 1985). Creating a new device is not enough; companies must be able to create good quality products (Davidow, 1986).

Customers can be a particularly valuable resource for incremental product improvements. Developing new technology in co-ordination with satisfied customers, a supplier can improve its products and help keep competitors away from the supplier's customer base (Burgeson, 1998). When customising, which means tailoring a product or service to fit a customer's specifications, to customer needs, the risks are becoming high. Customers' need requirements and the operating environment must be correctly understood. This can be covered by pricing policies, but then normally additionally the profit opportunity is limited. In growing high-technology companies, experienced engineering resources are scarce and, to enable for larger customisation, the engineering resources should be extensive in order to be successful. Normally, high-technology companies offer a range of products and services, but this range is heavily weighted toward services (Riggs, 1983).

Customer evolution develops from innovators to early adapters and to late adapters. For each of these groups, the product must be packaged as a different product. Innovators wish to use the product as first users; they may even wish to be part of the testing of the product. Late adapters wish to avoid the risk-taking. The purchasing of high technology products frequently includes a high risk and, as the customer spends a lot of money, impulsive buying is rare. Technical problems can be

overcome through excellent distribution, service, and support. If supplier and buyer can develop a high loyalty and long-term relationship, it will be difficult for the competition to overcome the barriers and the buyer can overlook some deficiencies; at this stage the buyer will be reluctant to look for another supplier. A service-oriented attitude will not assure good service; most customers can fully benefit from the product only with good service, and customers are willing to pay a premium for reliable suppliers. Good service can be an entry barrier to market entry (Davidow, 1986).

The culture of silos in the organisation forces each part of the organisation to work as if they were individuals, which leads to sub optimisation of the company. In this context silos refers to internal organisations that have isolated themselves from other parts of the organisation. Organisation in a culture whereby systems are managed differs from conventional organisations. Typically in systems cultures, customer and process needs dominate, functions have interactions with other functions of the company, and people understand the "bigger picture" (Rummlre and Brache, 1990).

In account management, the approach used is to concentrate on the share of the customer rather than of market share. Effectiveness and efficiency are the key to profitability when managing a customer relationship. A company needs to have relationships with its customers and the barriers blocking its competition. Many companies interpret customer service as a reactive function, which limits the use of services as a competitive advantage (Peppers and Rogers, 1993, Peck, 1997).

Peck (1997) describes account management as:

A system of marketing and selling that is driven out of a proactive, planful, and personal approach to managing mutually beneficial individual customer relationships. Account managers manage customer relationships in an economically prudent manner to drive sustainable, long-term and profitable customer relationship".

The idea of account management is to satisfy real customer needs . Value for the customer is built on an in-depth understanding of customer's needs, which leads to the personalised delivery of value and the building of customer loyalty (Peck, 1997). Account managers duties (Wayland and Cole, 1997) include acting as a single point of contact, developing customer relationships, understanding customer's decision making, identifying business opportunities, providing competitive intelligence, negotiating sales, and orchestrating customer service.

1.3 Product Life Cycle

In evolutionary theories, the focus is on a variable or set of variables that change over time. The theoretical quest is to understand the dynamic process behind the observed change. It is characteristics of evolutionary theories that: their purpose is to explain the movement of something over time. The explanation involves both random elements and mechanisms that systematically filter extant variation, and there are inertial forces that provide continuity of what survives the filtering (Nelson, 1996).

According to Nelson (1996), evolutionary theories enable one to see phenomena that might not be observed otherwise. The model generates "macro" time series that resemble the actual data. Evolutionary theories, frequently at a macroeconomic level, can be tuned to fit particular data well and evolutionary explanation is consistent with observed differences. Evolutionary theories tend to be complex. The added complexity is the price that is paid for opening up a productive research programme. The theory with added complexity frequently ends up with a theory in which precise predictions are impossible or highly dependent on particular contingencies. The theory may be less decisive in its predictions and explanations than an equilibrium theory, but the evolutionary theory may describe the reality in a more precise manner.

According to Grubler (1996), the patterns of temporal diffusion do not vary across centuries, cultures, or artefacts. No innovation spreads simultaneously. Rather, a temporal S-curve seems to be the rule (Grubler, 1996 and Tchijov, 1988). Initially, there is slow growth, which is followed by accelerating and then decelerating growth, culminating in saturation or a full niche. Sometimes, a symmetrical decline or a new growth pulse follows this. The life-cycle model has also been used to describe the evolution of an industry or a branch of an industry. Dosi *et al.* (1993) present a dynamic

structure that results in a market size that is similar to Grubler's pattern. Teece and Pisano (1994) use "path dependencies" with "replication" and "imitation" to describe how the evolution progresses in an industrial set-up. In his analysis Grubler (1996) concludes that a typical span between invention and innovation is approximately fifteen to forty years. The existence of innovations in itself does not guarantee subsequent diffusion. After selection of a particular alternative has taken place, positive feedback mechanisms yield increasing returns to adoption of the standardised alternative. Although diffusion is essentially a process of imitation and homogenisation, it clusters and lumps.

Ayres (1988), Tchijov (1988), Ranta (1988 and 1993), and Razvigorova (1988), and Kotler (1997) divide life cycle into birth, infancy, childhood, adolescence, maturity, senescence, and death. In the infancy stage of a new product after its introduction, the product is unique. The childhood stage is characterised by the appearance of imitative innovators. The adolescent stage of a product can be characterised by an increasing degree of standardisation towards one main configuration. The maturity can be characterised by a very high degree of standardisation of the product, and a market approaching saturation. In the senescent phase, the product is effectively a commodity, not changing or evolving. Kotler (1997) describes the product life cycle in terms of demand and technology life cycles. Product life cycles are shorter than demand or technology life cycles. The product life cycle concept is seen to be useful for interpreting product and market dynamics. Critics claim that one can seldom tell at what stage a product is exactly. From the organisational perspective, different stages need different organisational structures: in early stages a flexible organisation is required, but in the later stages the organisations tend to become more bureaucratic (Ayres, 1988).

In an example by Potts (1998) taken from the computer industry, the lifecycle of services is divided into four parts: rapid growth, transition, maturity, and end of life. Rapid growth is from the first delivery to the peak in the product cycle, transition is from the peak of the product cycle to the peak of service cycle, maturity is from the peak of service cycle to the last shipment and end of life is from the last shipment to the last unit in the installed base. In such cases, most of revenue was created during the last two phases and more than 95% of the profits were made during the last two phases. In practice, this means that when "manufacturing, development, and product marketing are leaving the scene, the service profit annuity is just beginning to kick in" (Potts, 1998). During rapid growth, suppliers can gain advantage with aggressive technical activity with a new product. Satisfied customers are the most effective "marketing technique". During the transition service, profits are normally modest but growing. Normally, at this stage an increase in service prices is necessary, as money-losing operations will be cut down, which in turn can lead to customer defection. Only in the maturity phase does the service normally become profitable and the cash flow turns into positive. Service price increases should continue. Maturity is similarly a good time for suppliers to introduce value-adding options and premium services. End of life poses new kind of demands, as the product is no longer produced. In this phase, these services may not receive much management attention anymore. However, it still could mean that even 50% of the shipped equipment is still in use. This equipment represents a chance for upgrade by means of the supplier's newer equipment (Potts, 1988). The focus of the company in these different phases is on various things. In rapid growth, the focus is on a successful launch of the product. In transition, logistics is important. In the maturity phase, premium and value-added services are important for the customer, and at the end of life, field operations must ensure that the company pays attention to the customer (Potts, 1988).

One of the weaknesses of the life-cycle theory is that it does not take into account the social context and the interaction with the market and the goal system. The social context can be better taken into account through organisational and marketing innovations. Quantitative models have been an attempt to develop models based on the life-cycle concept, where the basic idea is taken from the population dynamic (Ranta, 1988 and 1993).

After diffusion of technology succeeds, such forces and factors as performance, cost, fashion, and familiarity, determining its speed and extent, may change over time. In technical change, four levels can be identified: incremental improvements, radical changes in individual technologies and artefact, changes in technology systems, and changes in clusters and families of technologies. The latter levels of change are likely to entail longer times for diffusion. (Grubler, 1996)

Most products are in the maturity stage of the life cycle, and therefore most marketing management deals with mature product (Kotler, 1997). In mobile telecommunications the stage of maturity has not yet been reached, as Dataquest estimated that the mobile phone market grew 65 per cent in

1999. The growth of the mobile phone markets reflects also the growth of the mobile telecommunications infrastructure markets (Heikkilä, 2000).

Today's markets are unstable and unpredictable. In order to respond to market needs, companies need to be able to treat the development process as an open-ended process. The fashion industry provides good insight into interpretative management. In fashion, customer tastes continuously change and the industry must continuously question what is fashionable in order to survive. Product life cycles are short, as the customer needs change continuously. Companies need to interpret new situations, if there is a high degree of uncertainty as in the mobile phone industry, an interpretative approach has been strong compared to an analytical approach (Lester *et al.*, 1998).

Meyer and Seliger (1998) argue that product platforms are a way to reduce costs and speed up time required to generate products from underlying platforms in software development. They propose that as platforms are collections of subsystems, they would similarly make sense for other business than just for software, just as Internet platforms make a shift towards business models. Tabrizi and Walleigh (1997) have found that most companies are unable to complete their next-generation product-development, i.e., platform products on schedule. As platform products are developed to serve future needs, high risks are involved. Successful companies have learned how to deal with uncertainties of the marketplace and technology. As a key for the success of the companies has been seen their continuous interaction with their customers, particularly with those customers that were willing to take risks.

A flexible product-development process allows one to continue to define and shape products and delay final design configuration to the last minute. This approach can be used in the development of services, as in the case of Yahoo. A flexible product-development process allows a company to respond to market and technology changes even during the development cycle, as new competitors and technologies emerge quickly and standards and regulations flux (Iansiti and MacCormack, 1997).

Iansiti and West (1997) point out that a company's capability rapidly to turn research and development efforts into products that satisfy market needs is an important characteristic of a company. In the semiconductor industry, product life cycles shrank 25 per cent in the 1980s. Therefore, companies had to rethink their technology integration processes and many successful US companies abandoned the step-by-step model of research and development. The technology-integration processes must be tailored to local culture and conditions, particularly in the environment where a novel base of technology exists and the technology is applied in a complex context.

It is recognised that sometimes customers do not themselves recognise their needs (Riggs, 1983, Leonard and Rayport, 1997). In such cases, emphatic design can provide assistance. It involves guidance from the users, although they do not know it (Leonard and Rayport, 1997). The more radical an innovation, the harder it is to understand its attributes. Emphatic design is considered a relatively low-risk and low-cost way to identify potential customer needs. If a product or service is well understood, traditional marketing provides ways to gain useful information. However, emphatic design can yield results that conventional marketing cannot. It includes interactions with user environment, user customisation, intangible attributes of the product, unarticulated user needs, and triggers of use (Leonard and Rayport, 1997).

Bassanini and Dosi (1998) wrote that, as a new agent enters the market it chooses the technology best suited to its needs, given the preferences, information structure, and the available technologies. Preferences are heterogeneous and a distribution of preferences in the population is given. Information and preferences determine a vector of payoff functions for every type of agent. As a result of positive (negative) feedback, these functions depend on the number of previous adoptions. Agents compare the values of these functions as they enter markets and choose the technology that provides the best payoff. The "type" of agent entering the market depends on the distribution of types in the population. Because of positive (negative) feedback, the probability of adoption of a particular technology is an increasing (decreasing) function of the number of previous adoptions of that technology.

In his article, Arthur (1996) highlights the future of particularly high technology companies and the tendency of increasing returns, which enables those who are ahead of the others to get further ahead. Product differentiation and brand names mean that a few companies compete in a given

market, but traditionally when these companies have tried to expand, they have run into certain limitations. In high technology, increasing returns are possible as a result of research and development costs that are typically large relative to their production costs. As high-tech products are typically difficult to use without training, they drive markets in a direction where a certain company that gains ground has a good chance of gaining further ground. This can, to a great extent, be applied to services as well.

Particularly in high technology, companies need to change every time the market changes. In knowledge based markets, it generally pays to hit the market first and to have superb technology at the same time. Technologies come in successive waves and success goes to those who have the vision to foresee what shapes the next waves will take (Arthur, 1996). The success of companies depends very much on the ability of the management of the companies to select the winning technology at the appropriate time and to create organisational conditions appropriate for its development and diffusion (Razvigorova, 1988). At each stage of the life cycle, the stages can be characterised not only by the product itself, but also by production technology, marketing technology, research and development activities and organisation (Ranta, 1988).

1.4 Customer Care and the Service Manager

It was realised after the pre-study that the traditional definition of after sales was too narrow to describe all the tasks of after sales activities. In the literature, maintenance or preventive maintenance activities relate to the delivered equipment (Patton, 1980, Niebel, 1985, Kaplan and Norton, 1996). In the case of mobile networks, this definition does not cover the whole scope of the used after sales activities.

A new term, "care" is found in the present study, which is synonymous with after sales. The word "care" hints towards the health care industry from where it is likely to have originated, as according to Baird (1999), health care is essentially a highly personal service. During the 1990's, the word "care" was used increasingly frequently in a marketing context to underline premier customer handling, as in telemarketing by Ambrose (1996) and in the case of Volvo by Anonymous (1998), or customer focused orientation of the marketing and sales (Anonymous, 1995), or high-quality services to assure customer satisfaction (Stewart-Allen, 1996). Often, care is tied to services that are delivered to the customer after the final product has been delivered. In the scope of the present study, the services studied under the title care include preventive maintenance and maintenance activities, but are not only limited to that. Care has common characteristics with maintenance activities, as it is delivered to the customer after the final product has already been delivered; in the other words in the care phase. In this sense, care could be thought of as a set of after sales activities.

The basic needs related to equipment (Niebel, 1985) are performance, reliability, and maintainability, which have to be met in order to provide availability. The objective of maintainability is to maximise the availability of all facilities and equipment. Maintainability consists of design and production of equipment so that it can be maintained. Maintenance means performing duties to restore and to keep equipment in operating condition. Maintainability and maintenance refers to supporting operating capability that satisfies the user over the desired period of time (Patton, 1980). Care and care management not only includes maintenance, but additionally attempts to improve the performance of the operating capability that will improve the satisfaction of a user.

As the nature of the mobile networks is dynamic, i.e., they are constantly changing, finding an optimal solution for the customer appears to be if not impossible, at least a very difficult task. With the care activities, the supplier tries not only to carry out different kind of maintenance activities, but also to enhance the current capabilities of the existing mobile network. In order to include all of these activities under one title, it would be unfair merely to talk conventionally about maintenance, as there are also elements in care that frequently receive less attention in maintenance. This could partly be because, in certain industries other than mobile telecommunications, some of these services are not relevant.

In their analysis, Normann and Ramirez (1994) use the terms "relieving" and "enabling", which have close equivalents in the care process, in the terms "maintaining" and "improving". According to

Normann and Ramirez (1994), companies can relieve customers' workload by tackling certain tasks, but at best, companies can enable a better capability to complete certain tasks. Products or services that enable customers to perform their tasks better require a deeper understanding of the customers' business.

The service manager has the business responsibility in the supplier organisation to deliver the care services to the customer. The supplier nominates a service manager to be responsible for the management of the care phase in the supplier organisation towards a customer. The success of the service manager is indirectly measured by the success of the delivery of the care services. Success is interpreted in terms of the customer's perception of customer satisfaction and customer loyalty. The service manager concept examined in the present study relates to the particular service manager concept employed in the studied supplier company. Originally, the service manager concept was invented based on the customer feedback. During the present study, the concept of service manager was in its early stages and its role and importance were still not completely clarified.

1.5 Customer Orientation in Selected Industries

Benchmarking enables companies to compare their business process with that of other companies, and to get ideas on improving or redesigning their process. The primary aim of benchmarking is to determine the characteristics of best-in-class companies. Secondly, benchmarking studies collect data on the process of competitors (Robert Camp, 1989, Cannie, 1994, Petrozzo and Stepper, 1994, Barsky, 1995, Peters, 1996). In the present study, an aircraft industry benchmarking was screened through a case study in the aircraft industry, involving one supplier and its customer. As regards health care, a literature review was conducted to highlight certain characteristics of the health care industry.

Table 1 identifies commonalities between telecommunications and aircraft manufacturing. In the aircraft industry, the usability of the aeroplane and flight safety are highly important (see Table 1). Product development has certain specific characteristics, as authorities are involved already in the design of the aeroplanes. It is characteristic of the aircraft industry that some of the guarantees given to customers are industry specific and can be rather imaginative. The aircraft manufacturer customer support is not only limited to the product that they deliver to the customers, but it can additionally involve products that are delivered by another manufacturer. To some extent, the airlines share information regarding the technical aspects of the aeroplanes.

The aircraft manufacturer's service portfolio consisted of the same elements as that of the telecommunications supplier. The main market is in selling aeroplanes; after the sales, there is no larger market for services. Support services are considered important as future sales are considered dependent on those services. Many of the services delivered to the airlines are standard, but at the same time, the supplier tries to distinguish itself from the competitors. When the customers take their aeroplanes into service, there is still some development work to be carried out. Customer support of the aircraft manufacturer performs that development work. Training is important for the customer as pilots are trained for specific aeroplane types. In all aeroplanes, there is built-in redundancy, but repair activities are required. Repairs are carried out by the manufacturer or their third party.

The value added by the local support manager lies in the person's experience with the product and how to operate it. In order to support the customer, the local support manager does what is most urgently required by the customer, which varies from case to case. This was believed to be a strong point for the supplier. The local support manager's task is to gather information and questions from the customer, after which specialists carry out the detailed work. Normally, there are initially many technical questions but after a while, the questions become more complicated. In addition, the support manager follows certain procedures, part of which is customer reporting. In financial issues, the local customer support manager relies on the regional customer support manager.

The aircraft supplier developed a similar concept in after sales phase to that of the telecommunications supplier studied in the present study. The way the teams are organised is

similar to the division into account, project, and service manager in the telecommunications supplier of the present study. The aircraft manufacturer has had local customer managers for years and, according to them, the solution has proven to be successful. Deregulation of the airlines has caused the margins of airlines to drop. Another trend that has been noted is the increasing amount of subcontracting, which has led to a situation in which the airlines are less technically competent. Consequently, an aircraft manufacturer must understand much better the business of the airlines. The thinking of the supplier has had to change from that of a mere supplier to that of a partner for the airlines.

Table 1. Comparison of characteristics in different industries

Characteristics	Telecommunication: Supplier	Aircraft Manufacturer	Car Manufacturer	Health Care Manufacturer
Number of suppliers	Few	Few	Few	Few
Number of customers	Few	Few	Many	Some
Capital investment	Large	Large	Small/medium	Small/medium
Reliability requirement	High	High	Medium	High
Driving factor	Usability/reliability	Flight safety	Various	Patient safety
Life span	5-20 years	25 years	10-20 years	5-10 years
Amount services	Many	Many	Some	Some
Market	Competitive	Competitive	Competitive	Pseudo market

In general, car manufacturing is considered an industry from which other industries could learn. Therefore, it was decided additionally to compare telecommunications and car manufacturers. Car manufacturing was considered a potential candidate for benchmarking, but in conclusion, it was still seen as a quite different environment. (BMW, 2000 and DaimlerChrysler, 2000)

The health care environment was considered an area that would be particularly demanding for a manufacturer as the operations of certain pieces of equipment can be vital in critical operations. Therefore, the manufacturer is likely to find customer demands in the after sale phase particularly challenging. While the health care industry was considered a quite different kind of industry to telecommunications, it was thought to provide a particularly good environment for benchmarking. The health care manufacturers' environment is a true market, but hospitals are usually public organisations. As health care manufacturers' customers, hospitals, are not seen as part of a true market, this was considered very likely to be reflected in the decisions made by the hospitals.

According to Clewer and Perkins (1998), economists study decisions that are made about how best to use scarce resources to satisfy human wants. Health care systems face the same fundamental economic questions as other industries. The question of how decisions are to be made is one that is different from the case of industrial companies. This question must be posed in the public sector as resources are scarce and there is an opportunity cost. The public sector seeks to produce those services with the highest cost-benefit ratio. Health care operations are driven by the ambition to increase the welfare of the citizens, ethics, democracy, and equality (Kivisaari *et al.*, 1998 and Clewer and Perkins, 1998). An additional problem is that some costs can be shifted. Furthermore, the discount rate reflects what the present generation considers worth investing in. However, there are public projects that may benefit future generations. The evaluation and monitoring of outcomes of a quasi-market increases the cost of the contracting process. Most quasi-markets have pricing rules that do not allow prices to change freely. Consequently, prices do not give direct signals of the demand, but it is hoped that a quasi-market would nevertheless react more quickly than old bureaucratic structures (Clewer and Perkins, 1998).

Kivisaari *et al.* (1998) found that the development of new technical systems cannot be separated from the health care process and the development of services. Kivisaari (1994) states that life cycles of products are longer in the health care industry than is the case in mass markets as it takes time to spread new products to the health care market because of demanding and specific requirements imposed by authorities. Innovative health care products have been developed in close co-operation within different kinds of networks that are built in co-operation with the producer of the product and the potential customer.

Baird (1999) encourages use of the term “customer”, as it embraces a broader view than that of a patient receiving medical treatment. Baird (1999) further proposes measuring satisfaction of patients as a method of gathering baseline information of customer satisfaction. This statistical evidence would help personnel to accept the importance of customer service in health care. In the health care industry, hospitals have far more say in the selection of suppliers, as the patient primarily select hospitals according to factors other than their equipment. In order to engender customer loyalty, hospitals need to focus on managing relationships and paying attention to their information cycle. In recent years, the health-care industry has begun to realise the importance of marketing its services. (Anderson, 1982, Kohler *et al.*, 1990, Marshall and Javalgi, 1995)

Within health care, one could find interesting analogies with mobile telecommunications, see Table 1, as life support systems demand extremely high reliability features. Although areas of clear commonalities have been identified between mobile telecommunications care and health care, other areas have been identified where the differences between health care and care in mobile telecommunications infrastructure have made it less tempting to continue benchmarking beyond a literature review.

1.6 Research Problem

Much of literature dealing with marketing and management issues recognises the importance of customer satisfaction for business. However, according to Lele (1983), research in marketing has concentrated more on discussing how to increase customer sales rather than how to satisfy and create loyal customers. In businesses where services are part of the business, the services are visible to the customer. Therefore, it would be quite natural that such services would have a major impact on the customer satisfaction. After sales services in particular have received little attention in the management literature. In the context of the mobile telecommunications network, the care phase is the most visible part to the customer in terms of time the supplier spends with the customer.

The present study was undertaken to clarify certain questions related to the care phase in the business-to-business environment. The research was set-up to clarify a service manager concept and its plausibility. As the existing literature on the after sales activities is limited, the idea of the research set-up was extended to cover services that are provided to the customers during the care phase.

As after sales services were considered a factor that could have a considerable impact on the customer's total customer satisfaction, it would be natural to study customers' satisfaction with the supplier's individual services. Customer satisfaction and customer loyalty have been the focus of several researchers in the 90's such as Fornell (1992), Oliver (1996), Heskett (1997), Reichheld (1997), Kristensen (1998), and Parasuraman (1998). In the mobile telecommunications networks, after sales phase as a research subject was a new area to be studied. Customer satisfaction and customer loyalty are areas that have not been previously covered in the studies. Much of the customer satisfaction and loyalty studies were conducted in consumer markets, whereas the present study focuses on the business-to-business environment.

The pre-study stage found certain indications that the supplier and customer could perceive things differently and that this would make customers' and suppliers' decision making even more complex. Previous studies by Parasuraman *et al.* (1985), Barsky (1995), and Friday and Cotts (1995) identified that perceptions of the supplier's performance may differ between the supplier and customer. This would make the research even more complex, as judging an individual service is already a subjective matter. The present research investigates how the view of the customers and the suppliers differ with regard to the importance of the services, and customer satisfaction and loyalty.

The aim of the present study is as follows:

To increase understanding of how to manage customer relationship in the after sales business of an infrastructure supplier in the mobile telecommunications market

The research questions additionally involve practical problems related to the service manager concept. The theoretical issues involve communication in different phases of the mobile network life cycle in customer-supplier relationships. A central question is how to manage the customer relationship in order to gain satisfied and loyal customers.

1.7 Objectives and Scope of the Study

As the existing literature on the after sales activities is limited, the original idea of the research was extended. As the preliminary study provided information that the plausibility of the service manager could not be proven merely by the presentation of hard facts, such as financial results because of the numerous variables that affect it, other issues had to be taken into account. It was considered necessary to put efforts also into finding indirect evidence. As the service manager is in charge of the services provided as after sales activities, those services were also brought into the scope of the research.

The main objective of this research is an increased understanding of how a supplier can successfully manage its care business in the mobile telecommunications market. As the principal objective is somewhat broad, it has been specified by dividing it further into three questions:

1. What kind of perceptions do the supplier and its customers have of the care phase in general, and in particular regarding the importance of the services, and customer satisfaction and loyalty relating to those services. Furthermore, how do the views of the supplier and customer differ?
2. What kind of characteristics do delivered care services have when measured in terms of customer satisfaction and customer loyalty?
3. What kind of relationships and communication networks exist between supplier and customer? What is the role of the service manager in the customer-supplier relationship in the care phase?

These questions attempt to find answers to both to theoretical and practical problems that arise from the care set-up. As Parasuraman *et al.* (1985) and Friday and Cotts (1995) identified that customer and supplier views can differ from each other, there is interest in finding out whether the same applies in the care environment.

If there are large differences in the perceptions by the customer and supplier, this naturally has an impact on business decisions. From the supplier's point of view, the ability to understand and even anticipate customer's perceptions would provide useful business applications on how to balance and prioritise services. In addition, there may be a dilemma that in the customer organisation there can be various views on issues as well, and who among customer personnel are most critical for the supplier when it comes to a customer's decision making.

Customer relationship and customers' and suppliers' opinions on customer satisfaction cannot be explained simply as supplier and customer views; the customer-supplier relationship is more complex. The customer-supplier relationship consists of the individual views of the individuals that together form the customer-supplier relationship, which is a network of relationships between several customer and supplier employees.

Secondly, as research on this topic is limited it is interesting to find out do the assumptions made in other industries and in many cases in consumer markets apply for the care phase environment in the mobile telecommunications network environment. It is both of theoretical and practical utility to find out how different services of the care phase behave and what kind of characteristics can be discovered about those services.

And thirdly, research utilises communication networks between the customer and supplier to describe the current customer-supplier relationship. One of the pre-assumptions is that customer and supplier views would differ to a certain extent from each other. The present study seeks to identify those in the care environment, both in the customer and supplier organisation, who would have a "better" understanding of the services. According to Vavra (1995), relationship marketing and relationship management are highlighted, as a means to keep customers loyal. In relationship

management, there is preconception that some persons are more important for internal organisation than others. Krackhardt and Hanson (1993) propose that the informal organisation needs attention and that these social links can help managers harness the real power in their companies. Therefore, it is natural to assume that this relationship management thinking may hold an answer to the complex issue of customer satisfaction and loyalty. Identifying the “right” persons and their roles in the care phase could provide an insight about how to satisfy customer.

The scope of the present study includes customer relationships and their implications for customer satisfaction and loyalty with regard to the services. The focus of the present study is in the care phase of one mobile network infrastructure supplier. The present study utilises both the supplier's and customer's points of views. This has been tied together with the supplier's management concept for the care phase. In practice, the present study covers care services in the mobile telecommunications market of one infrastructure supplier and its five customers. In addition, two benchmark cases from the aircraft and health care industries have been included.

The unit of analysis in this research is customer-supplier relationship in the mobile network in the care phase. The study focuses on observing phenomena at the level of a company. The customer-supplier relationship consists of interviewed customers and interviewed supplier personnel involved with those particular customers. The research focuses on customer satisfaction and loyalty and how the two parties perceive them. The research does not try to discover the objective level of true performance by the supplier.

In the present study the term *mobile network* is used to refer to the infrastructure that the mobile operators use for providing services to mobile users. Simultaneously, another term, *communication network*, is used. Communication networks or social networks, i.e., social communications are used in the context of communication, particularly when a special effort is made to identify different characteristics in the communication between the supplier and its customers.

1.8 Structure of the Study

The second chapter provides an introduction to the empirical research. It discusses the theories related to services, service quality, customer satisfaction, employee satisfaction, and customer loyalty. Additionally, certain theoretical views are presented on how the high-technology environment has an impact on that framework. The customer relationship is highlighted and its impact on the customer loyalty is discussed. In the context of product support services, the current phenomenon of after market is discussed in general terms and how the after marketing is currently evaluated is also discussed.

In the third chapter, the hypotheses of the research are presented. Each hypothesis and its background is discussed briefly. Existing literature and topics handled are presented. The fourth chapter describes the research methodology. There is a short introduction to the background of the cases, how the interviews were conducted, and what there is particularly to be noted about the research and the way it was carried out. In addition there is discussion about the methodological concerns related to the study.

The chapters from the fifth to the ninth chapter present the case studies. Each of the case studies has its own chapter and is presented using the same structure, consisting of a description of the background of the case, interactions of the supplier and customer, influence of the care phase to the customer satisfaction, identification of the most important care phase services, customer satisfaction and loyalty of individual services, and analysis of the service manager's impact on customer satisfaction and loyalty.

The tenth chapter consists of the cross-case analysis. The tenth chapter describes the findings of different cases, summarises the cross-case findings, and presents ideas that were discovered from the case studies. In the cross-case section, the findings from the cases is compared. Many of the issues are tied into the frameworks of product life cycle and the cases are handled as evolutionary stories that follow each other. In the eleventh chapter, the reader is familiarised with the practice that further construct expands and enhances the care management concept, together with the characteristics of customer care and care management. Pre-requisites for successful after market

actions and the characteristics of the telecommunications market are presented. Based on the data from the cases. The research concludes by presenting a new and improved concept of management of care services based on the ideas discovered from the case studies.

The twelfth chapter covers contribution of the research to the theory. The research is evaluated, and validity and reliability issues are tackled. The hypotheses are additionally covered in the concluding part of the study. Current findings are included in the final discussion, which highlights the implications that this research has for the management of after market services in terms of both the theoretical framework and practical solutions that emerge from the present study.

2 FRAMEWORK OF THE STUDY

Chapter two deals with the theoretical body of knowledge related to customer satisfaction in the service industry, and in the care phase in particular. The main idea of this chapter is to focus on theories of the satisfaction-profit chain (Anderson and Mittal, 2000). The framework of the study expands on linkages of service attributes to customer satisfaction, customer satisfaction to customer loyalty, and customer loyalty to profitability in the after sales service environment. The connection between service performance to profitability is covered by studying individual elements of the satisfaction-profit chain. The main idea of this chapter is that by improving product and service attributes, customer satisfaction should improve. Improved customer satisfaction is expected to lead to greater customer loyalty, which in turn leads to greater profitability. All this is not often evident, as the links in the satisfaction-profit chain are asymmetric and non-linear (Anderson and Mittal, 2000).

The chapter begins with the general nature of the services. First, the theories and previous research into services in general is covered. Care services relate very much both to the concept of service managers and services are the key deliverables of the care phase. Therefore, the outputs of the care phase represent a natural starting point for observing the benefits of the care phase and care manager concept. The entire concept of care services is quite novel, and maintenance services have not traditionally been widely studied, while customer loyalty has been studied more during recent years. To gain a deep understanding of the arena of the study and related phenomena, the literature needs to be comprehensively reviewed and combined. The hypotheses are established based on this literature review. Topics starting from the studies on service quality and customer satisfaction are considered. Finally, the framework of the study is extended to cover studies of customer loyalty. These three subjects and the studies related to them and linking them to profitability are addressed. The importance of customer relationships in customer loyalty is underlined. This is followed by an examination of current theory on product support and after market services.

Traditionally in the industrial market, the seller has focused on selling and delivering the physical product, and has seen customer service as an add-on. Recently, however, business enhancement consulting as a new form of operation has emerged in many industrial firms; the product-centric approach has given room for a service business approach. A more complete way of viewing operations has taken place. Companies try to balance and consider more widely what the customers actually need and buy. Therefore, services and customer relationships have been positioned alongside of the product (Holmlund and Strandvik, 1999, Leminen, 1999).

2.1 Services

Kotler (1997) defines service as follows:

Service is any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product.

Mathe and Shapiro (1993) define service as follows:

Service is all of the activities undertaken by the firm to provide value in use over time, measured by increased customer satisfaction with a tangible product or series of products.

Manufacturing and service operations have common characteristics, but most services are created at the customer interface. In Table 2, the traditional distinction between manufacturing and services reveals certain traditional differences (Stonebraker and Leong, 1994).

Table 2. The characteristics of manufacturing and service environments (Stonebraker and Leong, 1994)

Characteristic	Manufacturing	Service
Nature of location		
Number of locations	Few	Many
Placement of locations	Near key resources	Near customer
Nature of employee		
Skill type	Technical	Behavioural
Nature of customer involvement		
Physical contact	Little	Great
Customer participation	Low	High
Nature of deliverable		
Perishable	No	Likely
Tangible	Yes	Mostly intangible
Constraining resource	Equipment, materials	Labour
Nature of capital structure		
Fixed costs	High	Low
Variable costs	Low	High

In the literature, a series of service characteristics have been discussed (Grönroos, 1980, Grönroos, 1982, Parasuraman *et al.*, 1985, Grönroos, 1988). Most services have four basic characteristics (Grönroos, 1988 and 1998):

- Services are more or less intangible
- Services are activities or a series of activities rather than a thing
- Services are at least to some extent produced and consumed simultaneously
- The customer participates, at least to some extent, in the production process

Services have four unique characteristics: intangible; more difficult to define and subject to alternative expectations and perceptions, heterogeneity; subject to human variability and often the customer is involved, perishability; once a service has been created, it has no value and inseparability of production and consumption; consumed as it is produced.

As the consumer and customer are frequently used as parallel terms, in the present study the terms are clarified (Parasuraman and Grewal, 2000a) in that the customer is an individual or business entity that buys the product and pays for it. The consumer is a person who uses or consumes the product.

Maister (1997) discovered that service companies have in general the same mission statements. Every service company must be able to satisfy three goals: to deliver outstanding customer service, to fulfil employee satisfaction, and to achieve financial success.

The important aspects of the service business process are as follows: the business process consists of a series of simultaneous and sequential activities that are performed by different actors; there are no clear boundaries between the different actors and input to and outputs from the process are time-wise inseparable. Customers can play several roles in which customer supports the business process. There does not seem to be a misfit in developing customer oriented market strategy and increasing productivity at the same time, but this frequently requires the manager to take a broader perspective on the company (Storbacka, 1992).

Mathe and Shapiro (1993) define product in terms of three critical aspects: physical, tangible or technological, and intangible. In time, both the tangible or technological and the intangible may change as the way in which the product is used and the environment in which it is used changes. They also separate services into two main categories: encouraging or facilitating the sale of a product and services that are intended to increase the benefit to the customer when using the product, or the customer's satisfaction while using the product. The later definition is more frequently used in the after sales environment.

Services have been an integral part of companies' marketing mix (Wellemin, 1984). Quality service is frequently realised better when it is missing than when it is present. Wellemin (1984) argues that one of the most important aspects in influencing customer's perception is to try to convince customer that the supplier cares about him/her. It is important to keep the customer updated of the possible changes that take place. Services create an increasing proportion of company profits in many industries. Wellemin (1984) has identified, see Table 3, benefits of service contracts, which in ideal conditions are made as the product is sold:

Table 3. Benefits of the service contracts to supplier and customer (Wellemin, 1984)

Benefits to supplier	Benefits to customer
Simpler planning	No need to place rush orders
Assured revenue	Known cost
Regular customer contacts	Reduction in administrative costs
Balancing of work load	Maintenance of assets due to regular preventive maintenance
Simpler administration	

Service contracts can be viewed as a way to extend the relationship with the customer. They can be used to generate complaints, information, and new product ideas. In this approach, even a low-priced service contract can be justified (Heskett *et al.*, 1997).

Service is one way of differentiating the product from that of the competitors and it can represent an effective competitive advantage, as it is difficult to convince customers that the company provides high-quality service (Davidow, 1986, Brown, 1992, Mathe and Shapiro, 1993, Wellemin, 1984). Customers can be convinced of quality service only by constantly delivering excellent service. Generally, if services are priced into products, then services are seen as means, but if services are priced separately, then services are seen as business itself (Rothschild, 1984). Achieving sustainable competitive advantage through superior products and reasonable prices is difficult. Service can be used to distinguish the product and it is much more difficult for competitors to imitate (Rothschild, 1984, Parasuraman and Grewal, 2000b). The cost of supplying high quality service is likely to continue rising. Therefore, service must utilise technical developments. Suppliers need to demonstrate to customers added value, as there will be pressure on the margins.

Parasuraman and Grewal (2000b) predict that technology will be a major force in the future shaping of the buyer-seller relationships. In Figure 1, Parasuraman (1996) further develops Kotler's (1997) triangle model of services marketing by adding technology to it. The pyramid model emphasises the need to manage company-technology, employee-technology, and customer-technology linkages to maximise marketing effectiveness.

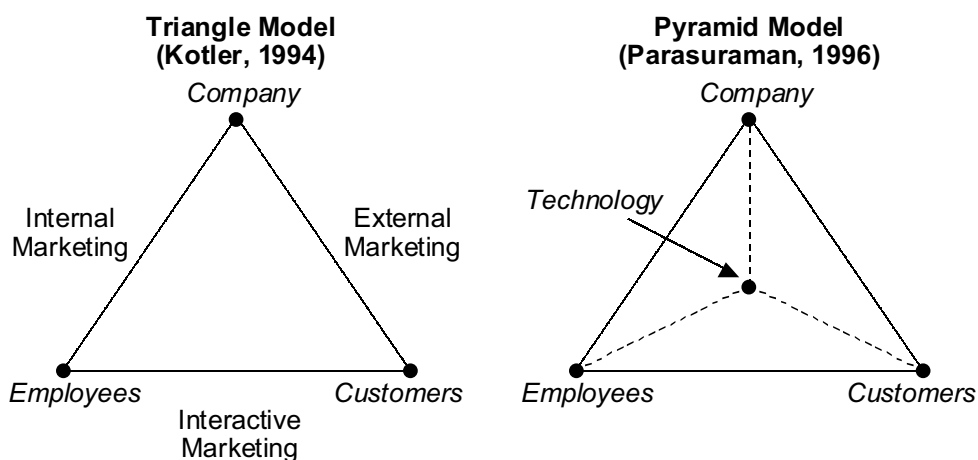


Figure 1. The triangle and pyramid models (Parasuraman and Grewal, 2000b, p. 171)

Parasuraman (1998) argues that the importance of the customer service is becoming increasingly important, as the supplier's focus shifts from selling to customers to serving them effectively. The relative importance of customer service can vary depending on the type of buyer-seller relationship and the nature of the products.

Service companies (Maister, 1997) can develop their practices in five areas: broadcasting, courting, superpleasing, nurturing, and listening (see also Table 4). Broadcasting involves those activities that generate opportunities with new customers. Courting means that a specific customer has been recognised and the company is addressing the customer. Superpleasing involves doing outstanding work and servicing the customer so that the customer is more than satisfied. Nurturing means paying attention to the customer so that future business can be won. By listening to customers describe their needs, a company can improve the competitiveness of its existing services and identify opportunities for developing new services. Maister (1997) makes the observation that companies concentrate on broadcasting and courting, i.e., on trying to gain new customers. This may be because companies take it for granted that nurturing, superpleasing, and listening take place automatically, but this assumption is incorrect.

Table 4. Matrix of needs and customer relationship

	Old Customer	New Customer
Aware of a need	Superpleasing (Highest ROI)	Courting
Not aware of a need	Nurturing	Broadcasting (Lowest ROI)

For most customers, superpleasing brings the highest return on investment (ROI). The most successful growth strategy is one whereby existing customers buy existing products. This is supported by research conducted at the Strategic Planning Institute and at GE in the PIMS (Profit Impact of Market Strategy) database (Maister, 1997). Growth through penetration is appropriate for companies with a broad range of product lines. It creates both incremental sales and strengthens customer relationship. In the service industry, an important part of selling is to be able to convince customers and gain their trust. The next most successful strategy is to sell new products to existing customers. The problem with courting and broadcasting is that those customers do not know the company or have a relationship with the company and to build a relationship is a somewhat time intensive activity (Cannie, 1994, Maister, 1997 and Peck, 1997).

Bolton *et al.* (1993), in their study, propose the precept that telecommunications services are technologically driven and structural change will follow technological change. In telecommunications, this became feasible with new switching technologies, after which privatisation and deregulation emerged. The structural and technological change within telecommunications services is predicted to continue in the future. As an example, Telecom Eireann stresses a commercial approach in order to meet its customers' needs (Bolton *et al.*, 1993).

2.2 Service Quality

According to Vavra (1995), quality is:

Consistently delivering products and services that fully meet consumer needs and expectations.

Quality is defined by Stonebraker and Leong (1994) in the following terms:

Product or service quality requires a total system, which identifies customer requirements, which designs the product/service to those requirements, and which establishes a production or service delivery system to produce in conformance with the specifications.

According to Woodruff (1997), customer value is:

A customer's perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate (or block) achieving the customer's goals and purposes in use situations.

Vandermerwe (1996) makes three assumptions regarding customer value:

1. Value is not what goes into a product, but what a customer gets out of it
2. A customer gets this value out over a period of time, rather than at a point in time
3. Value happens in the customer's space rather than in supplier's space, where only costs accumulate

According to Naumann and Giel (1995), becoming market driven means identifying market growth, market attractiveness, and target markets, while becoming customer driven means using the customer to drive continuous improvement, organisational reinvention, and radical redesign. When a company is customer driven, it means that the customer is the one to decide on the supplier's value-added processes (Stenberg, 1997).

Quality work does not mean quality service (Maister, 1997). According to Brown (1992), customers prefer organisations that deliver quality service, and suppliers can charge premium for quality services. Early research (Grönroos, 1982) suggests that customers assess service quality by comparing what they feel a seller should offer and compare it against the seller's actual service performance. Quality control and marketing must take place during service production and consumption. Grönroos (1988) has identified a list of six criteria of good perceived quality: professionalism and skills, attitudes and behaviour, accessibility and flexibility, reliability and trustworthiness, recovery, and reputation and credibility. The first is outcome-related, reputation and credibility are image-related, and the rest are process-related. Storbacka *et al.* (1994) and Holmlund and Strandvik (1999) note that relationship quality can be seen as an antecedent to many other perception concepts, for example, value, satisfaction, trust, and commitment.

The service quality model of Parasuraman *et al.* (1985) identified five key gaps that can cause problems in service delivery. These gaps are:

1. Research gap – between customer expectations and management's perception of those expectations
2. Planning and design gap – between management's perception of what the customer wants and the designed capabilities of the system that management develops to provide the service
3. Implementation gap – between what the service system is designed to provide and what it actually provides
4. Communication gap – between what the service system provides and what the customer is told it provides.
5. Reality gap – between customers' service expectations and their perception of that service

A company should always pay attention to the customer perceptions and expectations. If there is a difference between customer expectations and perceptions, there is a gap and in practice, it does not matter whether the gap is based on facts or feelings, but how the customer perceives service matters (Friday and Cotts, 1995).

In studies of customers' expectations of service quality and their actual experiences, the following five elements are seen as the most important to a buyer (Gitomer, 1998, Heskett *et al.* 1990, Griffin, 1995, Parasuraman and Grewal, 2000b):

- Reliability – ability to provide what was promised
- Assurance – knowledge and courtesy of employees and their ability to convey trust and confidence
- Tangibles – physical facilities, equipment and the appearance of the personnel
- Empathy – caring and individual attention
- Responsiveness – willingness to help and provide prompt service

Two critical dimensions are reliability and responsiveness. Generally, reliability is the most important for customers when they assess service (Parasuraman and Grewal, 2000b). Responsiveness means anticipating problems before they occur, rather than fixing problems quickly. Companies must work at making sure that problems will not occur at all. Once the customer is sure about the quality of the product and responsiveness of the employees, the probability of a customer becoming a loyal customer increases.

According to Friday and Cotts (1995), customers evaluate services based on the purpose of the service, necessity, importance, results, cost, and risk. In order to have appropriate expectations, a customer should have a full picture of the purpose of a job. Depending on the customer's perception, the necessity of a service can vary. If a service is necessary to help customers perform their jobs, they have high expectations for the job. Individuals have their own views of the results of the service; the perception of costs is relative to each customer's perspective. If a customer sees a risk associated with dealing with the company, their perception of the added value can be minimal. According to Naumann (1994), determinants of service quality are:

- Reliability – consistency of services
- Responsiveness – willingness or readiness of employees to provide service
- Competence – possession of required skills
- Access – approachability and ease of contact
- Courtesy – politeness, respect, consideration, and friendliness
- Communication – keeping customers informed and listening
- Credibility – honesty, trustworthiness
- Security – freedom from danger, risk, or doubt
- Understanding/knowing the customer – making the effort to understand a customer's needs
- Tangibles – physical evidence of the service

Products are made up of two elements: basic features such as components, ingredients and performance, and such added value components as image, service, styling, and support. Every product additionally entails services. Customers do not always differentiate between product and service quality, but regard these elements as a package. Research shows (Naumann, 1994) that improving tangible product quality is easier than improving service quality for most companies. Its implication is that service quality is more difficult to replicate, as service quality derives from corporate culture and therefore it can be a more permanent competitive advantage (Naumann, 1994, Stenberg, 1997).

In the customer evaluation process (Heskett *et al.*, 1990), it has been reported that customers perceive greater risk when purchasing services than products, rely more on information from personal sources, and use price and physical facilities as the major cues to service quality. Customers can be reluctant to try new services because of the risks involved (Cannie, 1994). For many non-professional services, the customer's set of alternatives includes self-provision of the service. Competing options for services are normally smaller than for products and consumers carry out greater post-purchase evaluation with services than with products.

Customers define quality frequently through their subjective and preconceived values. The measures of quality in service organisations are generally more subjective than in the manufacturing environment. Therefore, the manufacturing view of quality does not apply in isolation, but must be seen in the context of the customer service environment in which the product is delivered (Stonebraker and Leong, 1994).

Service quality is one element of the service equation. Frequently, the results are more important to the customer than the process quality. In certain cases, price and other acquisition costs can be more important than process quality (see the customer value equation). Value is not equated with low prices; services and goods of high value can be at high or low prices. As customer needs are different, customers are willing to pay very different prices for a given service, depending on its importance. The resulting value to the customer over the costs creates potential profit. It has been estimated that a 5 per cent improvement in customer loyalty would result in a 25 to 85 per cent improvement in profit in service industries (Heskett *et al.*, 1997).

The customer value concept holds that customers buy what creates the most value for them. It has also been defined as an emotional bond created between a customer and a supplier. A precondition for this bond to be established is that the product be able to meet or exceed customer's expectations. Customers can be delighted if the supplier is able to improve its performance continuously (Butz and Goodstein, 1996, Stenberg, 1997).

Service quality is a logical driver of perceived value (Parasuraman and Grewal, 2000b). Even if the buyer-seller relationship involves a physical product, excellent presale or postsale can add to benefits received and reduce the buyer's non-monetary cost like time, effort, or mental stress.

There are differences in customers' abilities to evaluate the quality of tangible goods and services. In general, most goods are easier to evaluate compared to most services and it seems that most complex services are the most difficult to evaluate (Mathe and Shapiro, 1993).

Heskett *et al.* (1990) claim that quality of service equals delivered service quality minus service expected. Quality of service is seen to be similar to customer satisfaction. Heskett *et al.* (1990) realised that the results from a service are frequently difficult to assess, in some cases even after the purchase of service. The service value is a subjective matter and is defined by the customers. Stenberg (1997) calculates total added value for the customer as the difference between the customer's benefits and costs including both quantitative and qualitative aspects.

The customer value equation can be presented as follows (Heskett *et al.*, 1997, page 40):

$$\text{Value} = \frac{\text{Results produced for the Customer} + \text{Process Quality}}{\text{Price to the customer} + \text{Costs of acquiring the service}}$$

The customer value equation is the customer perspective that influences purchasing decisions. The value and goods delivered to the customers equals the results created for them as well as the quality of the processes used to deliver the results, all in relation to the price of a service to the customer and other costs incurred by the customer in acquiring the service. The value of the results varies with the size of the service tasks and their importance for the customer. Frequently, the way a service is provided is as important as the results. For example, in a study of health care, more than half of the claims did not involve patient injury or unpleasant effects. This has the following effects on service providers (Friday and Cotts, 1995, Heskett *et al.*, 1997):

- Service quality is relative
- Service quality is defined by the customer
- Service quality varies from customer to customer
- Service quality can be enhanced by meeting customer expectations and controlling those expectations

A company's most significant success factor is the ability to deliver better customer value than the competitors do. By analysing (McDougall *et al.*, 1997) the components of customer value, a company can estimate a customer's true profitability. Customer perception of expected benefits consists of product and service attributes. Fredericks and Salter's "customer value package" (1995) additionally includes company image relative to the competition. Good customer value consists of product value, service value, and value-based pricing (Naumann, 1994).

Sacrifice consists of transaction cost, life cycle cost, and risk (Naumann, 1994). Many customers measure their costs only in terms of price, but in certain cases, the acquiring costs can be substantial and convenience costs can have a value for a customer (Heskett *et al.*, 1997, Wayland and Cole, 1997). Customers' perceived risks (Heskett *et al.*, 1990) should be reduced in ways that would increase their expectations and create competitive advantage. Service reliability reduces the costs of service delivery and builds value for the customers. For an organisation that offers a service whose quality cannot be judged in advance, a service guarantee may represent an important marketing tool, and it can be significant for the potential customer to whom this service may cause a substantial risk. Service guarantees may further help the supplier to focus on its customers and can even lead to the re-design of the service process with breakthrough service (Hart, 1988, Cannie, 1994, Barsky, 1995, Griffin, 1995, Heskett *et al.*, 1997).

Five basic customer value lessons (Naumann, 1994) are:

1. Customer defines the appropriate product quality, service quality and reasonable price
2. Customer value expectations are formed relative to competitive offerings
3. Customer expectations are dynamic, always demanding
4. Product and service quality must extend throughout the channel
5. Maximising customer value requires total organisational involvement and commitment

Walker (1998), Naumann (1994), and Bhote (1996) claim that the Japanese quality function deployment (QFD) technique provides statistically valid market research to determine the value customers place on different attributes. Vavra (1995) recognises applications of quality function deployment in marketing context as well. Rust *et al.* (1995) have described return on quality (ROQ) as a method to justify financially spending on quality initiatives. In return, quality improvement efforts are treated as investments.

2.2.1 Quality in Customer Services

Marketing activities strive to producing customer satisfaction with the "four P's", product, promotion, price, and place (Kotler, 1997). Many companies perform the "place" function of physical distribution separately from marketing. However, it is likely that physical distribution through the provision of customer service contributes to the success of a company and can enhance customer satisfaction. Industry has generally failed to recognise the importance of customer service to customer satisfaction (Innis and La Londe 1994). Hartley (1989) proposes that, in addition to the "four P's", one should consider a fifth 'P', public image. Public image is a composite of how an organisation is viewed by its various stakeholders.

According to Innis and La Londe (1994), customer service can influence demand in the market. It has been suggested that customer service is one of the most important considerations when a supplier is evaluated (Sheth, 1973, Perrault, and Russ, 1976, Jackson *et al.*, 1985). A supplier's reputation for good service attracts potential customers and keeps existing customers loyal. Good service additionally provides protection from price competition (Hartley, 1989).

Quality service starts with customer service. Customer service is viewed as a process that takes place between a buyer, a seller, and third party (Innis and La Londe, 1994). The customer drives the service process and defines the quality (Friday and Cotts, 1995). Previous studies have shown that customer service is an integral and necessary part of the marketing mix, and it offers a significant opportunity for companies to gain advantage in the market place (Sterling and Lambert, 1987, Lambert and Harrington, 1989). Higher levels of customer service can create customer loyalty and improve long-term sales and profitability of a supplier. Companies that think about improving customer service should engage in it only if they can expect adequate returns for their attempts (Bowersox and Closs, 1996). Eckert and Goldsby (1997) propose that the constructs of involvement and visioning could be used as predictors of a company's propensity to consider service improvements. High involvement and high visioning customers can be identified as a potential group that would be more likely to respond to improved customer service with increased customer loyalty. If a supplier opts to improve customer service, it should be based on difficult-to-imitate competencies in order to avoid negation of the competitive advantage.

The operative quality of a service organisation is measured by its ability to handle service situations. To support customer service, the organisation should have maximal freedom to make decisions and utilise resources. By decentralising decision making, an organisation can make decisions faster and more effectively, at least in theory. Successful service organisations have in common that they are built of independent profit centres and they know the importance of customer trust and quality of services for the company's success (Näsi *et al.*, 1987).

Customers that purchase services with high transaction values, high requirements for accuracy and high-perceived financial, legal, or personal risk prefer to deal with the same person. However, these dedicated servers are almost always a costly solution for the service provider. This is because this

server does not have knowledge of all the areas and the person is not available all the time. Some organisations have therefore chosen to form teams of service providers (Heskett *et al.*, 1997).

2.2.2 Lifetime Value of a Customer

The lifetime value of a customer can be seen as the sum of value of purchase stream and value of referrals. The value of referrals can be calculated as the number of referrals by satisfied or dissatisfied customers multiplied by the referral capture or loss rate. Referral rate is influenced by the importance of referral rate to the potential customers and by the incentives to make referrals and to receive referrals. Even estimates of the lifetime value of existing customers under various assumptions will help organisations to adjust their spending to retain customers (Cannie, 1994 and Heskett *et al.*, 1997). Most service managers claim to be unaware of the value of their customers, although they know their sales margins (Heskett *et al.*, 1990).

Many companies spend money mainly on recruiting new customers. One reason for this behaviour is that marketers assume that current customers are satisfied. Investing in existing customers is sensible, not only because the lifetime value of the customer is frequently much higher than the value of a single purchase, but also because many customers need after-purchase reassurance. Customer lifetime value can be calculated for example using customer information files (Reichheld and Sasser, 1990, Sewell and Brown, 1990, Cannie, 1994, Glanz, 1994, Vavra, 1994 and 1995, Anderson and Mittal, 2000).

The level of support that a supplier provides to its customers should depend on their expected lifetime value to the company. A supplier must find ways to reduce service costs to customers with thin profit margins and enhance services to those customers whose retention is important for the supplier's profitability (McDougall *et al.*, 1997).

2.3 Customer Satisfaction

2.3.1 Definition of Customer Satisfaction

Kotler (1997) defines customer satisfaction as follows:

Satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations.

Brown (1992) defines customer satisfaction as:

The state in which customer needs, wants and expectations throughout the product or service's life are met or exceeded resulting in repeat purchase, loyalty and favourable worth-of mouth.

According to Jones and Sasser (1995), four basic elements affect customer satisfaction. They are: the basic elements of the product or service, basic support services, a recovery process for counteracting bad experiences, and extraordinary service. There are many definitions of the key elements of the services, but this one is considered appropriate in the context of care or after sales services.

Jones and Suh (2000) differentiate between transaction-specific satisfaction and overall satisfaction. Overall satisfaction is based on the information from all previous experiences with the service provider and is viewed as a function of all previous transaction-specific satisfactions (Teas, 1993, Parasuraman *et al.*, 1994). Transaction-specific satisfaction refers to a single service encounter. In general, transaction-specific satisfaction may not be perfectly connected to overall satisfaction.

The empirical results support that transaction-specific satisfaction can be empirically distinguished from overall satisfaction. Overall satisfaction is a better indicator of a customer's repurchase intentions than transaction-specific satisfaction (Jones and Suh, 2000). Under certain conditions, transaction-specific satisfaction is not a good predictor of repurchase intentions. In an ideal situation, both the transaction-specific satisfaction and overall satisfaction should be assessed.

Transaction-specific satisfaction directly influences a customer's repurchase intentions, but only when overall satisfaction is low. In such a case, consumers allow their evaluation of the last service encounter to influence repurchase decisions. When a customer has had a bad experience, the service manager may wish to remind the customer of his/her previous overall satisfaction. Particularly at the early stages of the customer relationship, high levels of transaction-specific satisfaction are particularly important (Jones and Suh, 2000).

A consumption-system that consists of a bundle of goods and services that are consumed over time in multiple consumption episodes conceptually has three constitutive elements: attribute-level evaluations, satisfaction, and behavioural intentions. Transaction-specific and cumulative satisfaction are distinguished, as consumption occurs as a series of encounters between consumption system and the consumer. In the case of automotive consumption, product and services are the key subsystems of the consumption-system (Mittal *et al.*, 1999).

The relationship between attribute-level evaluations and overall satisfaction is dynamic and shifts over time. Both product and service satisfaction have an asymmetric crossover effect in determining behavioural intentions toward the supplier. The relative magnitude of crossover effect changes over time. Initially, service satisfaction is more important, but over time, the product becomes more important. The complementary role of services and products has been realised by many suppliers in structuring consumer experiences (Barsky, 1995 and Mittal *et al.*, 1999).

Mittal *et al.* (1999) point out that, as consumers learn more about certain attributes, the weight of attributes in determining overall satisfaction may change. This kind of learning is important in such information-intensive and skill-based products as software or Web sites. By learning more about an attribute, consumers may become more efficient users of it, which may affect the level of satisfaction consumer experiences. A subsystem's contribution to goal attainment may moderate its role as a mediator. For example, a service or product subsystem may be a stronger mediator, depending on the customer's focus.

Parasuraman (1997) questioned whether the same conclusions are likely to emerge from ascertaining how much value customers derive from a product and ascertaining how satisfied they are with it. Parasuraman *et al.* (1994) point out that the connection between service quality and customer satisfaction is an unresolved issue. Zeithaml *et al.* (1996) point out that the relationship between service quality and profits has begun to accumulate, but it is not straightforward or simple. The present study does not place special emphasis on this question; rather, customer value and customer satisfaction are handled in parallel, assuming that that framework of Parasuraman *et al.* (1994) and Teas (1993) of the components of transaction specific evaluations are valid.

The concept of customer value suggests a strong relationship with customer satisfaction (Woodruff, 1997). According to Parasuraman (1997), to create superior value continuously for a buyer requires that a supplier understand the buyer's entire value chain. Attributes that motivate a customer's initial purchase may differ from the criteria later (Woodruff, 1997). According to Parasuraman (1997), deficiencies that drive customers away may occur for other attributes than those that attract and retain the customers. In addition, Reichheld (1996) assumes that things that satisfy customers may not always be the same as those that create customer loyalty.

According to Zeithaml *et al.* (1996), companies should first examine the impact of service quality on customers' responses by asking them the following questions: What is the level of quality a supplier must deliver in order to keep the customer; what would encourage the customer to recommend the supplier; what factors would reduce the likelihood of a customer spreading negative word-of-mouth; and should the supplier focus on proactive service improvements or on complaint handling in order to keep the customer.

Based on the research by Oliver (1993), it appears that positive and negative effects have independent effects on customer satisfaction. When considering product and service quality,

product quality tends to be related to customer dissatisfaction and service quality is more related to the customer satisfaction. In general, there appear to be two categories of factors: hygiene and satisfier attributes. Hygiene factors contribute to customer dissatisfaction and satisfiers contribute to customer satisfaction. High levels of customer satisfaction resulted from the delivery of satisfiers. To delight a customer, a company's performance in hygiene factors must be adequate and combined with high performance in satisfiers (Naumann, 1994, Peck, 1997).

According to Finkelman and Goland (1990), companies need to develop a detailed understanding of customers' expectations in each stage of their ownership experience, develop supporting procedures and establish evaluation and incentive systems in order to satisfy customers. Wellington (1995) divides customer satisfaction elements into product, sales, after-sales, location, time, and culture. The satisfaction elements of after-sales include maintained interest and complaint handling. Complaint handling should be responsive and keep the customer advised through the process; a customer should feel appreciated. A customer's reordering should be made easy and it should build on existing information about the customer.

The importance of delight has additionally been recognised in the area of quality by Deming (1986), who encourages companies to do more than merely satisfy customers. Delighting the customer can be a profitable business practice. The meaning of product and service features to consumers is divided into product attributes, satisfiers, and delights. Product attributes are central to the basic function of the product and they only dissatisfy as the consumer expects their presence. Satisfiers are satisfying in the sense that high levels of such attributes have the potential for further satisfaction beyond that provided by the basic function of the product. Delights are unexpected and enjoyable. There are two types of delights: those that raises consumer expectations and those that are appreciated on a onetime basis and may be sought again. In cases of assimilated delight, it is likely to raise consumers' expectations. In this case if the loyalty effect or a consumer attraction can be improved, the delighting feature could be considered. In the case of transitory delight, the firm benefits only minimally as the delight is soon forgotten. Expectations are likely to be raised after delight, and delighting the customer will be more difficult in the future (Farson, 1997, Rust and Oliver, 2000).

A customer is delighted (Friday and Cotts, 1995) once the service that is delivered exceeds the customer's expectations. Even if a customer's demands or expectations are unrealistic or inappropriate, the customer makes the buying decisions. Customer expectations can be exceeded in two ways: in the first, the consumer says that the product was better than expected, but not surprisingly, and in the second, the level of performance is surprisingly positive (Rust and Oliver, 2000).

Although expectations become higher, the supplier may benefit from the delight, because if the competitor is unable to copy the delight programme, it will be affected more severely than the focal supplier will. If the competitor can easily copy the delight programme, there is no advantage to be gained, as the situation resembles a "Prisoner's Dilemma Game". In such a scenario, profits decrease and all suffer. According to Rust and Oliver (2000), if a company delights a customer once and then returns back to normal performance, the company is likely to suffer in the future, as expectations have been raised.

Despite efforts to improve customer satisfaction, customer satisfaction levels remain as before. This may be partly because the expectations of customers have risen or companies have not focused on what the customers wanted. Companies need to discover what makes customers dissatisfied. Customer value management measures customers' perceptions of value and those relating to competitors. Measuring customer satisfaction is similarly the basis for learning. The approach seeks answers to questions regarding the key buying factors that customers value, how customers rate supplier's performance versus competitors on each buying factor, and the relative importance of each of these components of customer value. Such questions make it possible to construct an index of customer value (Basky, 1995, Wellington, 1995, Farson, 1997, Daniels 2000).

2.3.2 Operationalisation of Customer Satisfaction

As customer needs and expectations are changing all the time, this will lead to a situation whereby customers keep setting ever higher standards, and therefore to achieve perfection is impossible (Wellington, 1995, Farson, 1997). Markets should be seen as a group of individual companies, and each of them must be treated individually with different requirements, experiences, commitments, and relationships (Ford *et al.*, 1998). Implementing customer satisfaction philosophy means identifying customers, then identifying their needs and expectations and finally, measuring their perceptions (Stenberg, 1997). Knowing the needs of the customer makes it easier to anticipate the ideal set of products and services. A major flaw for all the companies has proved to be their inability to understand other ways that customers can be satisfied (Rothschild, 1984). By implementing direct and continuous employee contacts with the customers, the customers' requirements and expectations can be determined. This employee-customer connection additionally conveys the message that the company cares about their customers (Chase and Garvin, 1989, Stonebraker and Leong, 1994).

Customer needs can be determined through marketing research, customer interviews, reading customer concerns, or involving customers in the design of services and service deliveries. In order to decide if the service can be provided at a profit, it is necessary to link value equation to the strategic service vision. Working together with both supplier and customer can increase profitability by expanding margin potential (Wellemin, 1984, Cannie, 1994, Grant and Schlesinger, 1995, Heskett *et al.*, 1997).

A customer satisfaction study should begin by asking about the factors affecting customer satisfaction, how important those factors are for the whole, and the level of customer satisfaction (Järvelin *et al.*, 1992). A problem with customer satisfaction surveys (Naumann, 1994) is that a poor customer satisfaction programme yields vague data and raises customer expectations. If customer expectations are raised and a company's performance remains the same, the customer's overall satisfaction will decrease.

According to Heskett *et al.* (1997), there is a logical explanation why customers give "4" (in a scale from 1 to 5) in customer satisfaction studies and yet loyalty seems to be missing. Many may not wish to experience displeasure or penalisation of a long-time service or product provider by low ratings. However, if the service or product is less than perfect, customers feel that they cannot give lightly a "5". Consequently, these customers can then give a "4", which has an indifferent meaning for them.

Customer surveys, which are conducted frequently and consistently, can be an effective way to measure customer satisfaction and customer loyalty. Customers tend to overstate their intent of repurchase in relation to what they actually do later. Over time, organisations that have built a database have determined that the overstatements remain somewhat constant. Therefore, companies are able with reasonable accuracy to estimate future buying purchases of their customers (Jones and Sasser, 1995, Heskett *et al.*, 1997).

Customer feedback, in the form of comments and complaints, is a source of information. As the feedback is occasional, it is difficult to draw conclusions on trends based on the feedback. Market research could be a useful technique for discovering why new customers switch their supplier and why defected customers left. Frequently, defected customers give "easy" answers, but in-depth interviews reveal the real reasons. After the real reasons are determined, the service recovery process can begin, and this is frequently the last chance for retaining the customer (Heskett *et al.*, 1997, McKenna, 1997).

Complex service processes give greater opportunity for service problems to arise and involve more customer contacts. Individual staff vary in their ability to handle customers, particularly in problem situations. Danaher and Mattsson (1998) found that processes of higher complexity do not necessarily have the lowest customer satisfaction evaluation scores or the highest variation. It was additionally found in the study that attributes that make customers satisfied are not the same as those that make the customer loyal.

According to Danaher and Mattsson (1998), the management of companies should not assume that attributes which make a customer satisfied with one service process will be the same for all of their

processes. Management should measure and monitor all of their service processes and identify factors that are unique to each process. Various processes must be tailored to the key attributes for a particular process, rather than one strategy applied for all the processes.

In telecommunications, Nortel (Bowden, 1998) has recognised a need to enhance the emphasis on customer satisfaction. Nortel takes into account such customer base requirements as language, culture, and respondent influence within recipient organisation in their customer satisfaction process. Process-based business models are means to facilitate continuous improve performance. Nortel has determined that only their very satisfied customers consistently place repeat orders. Customer value management must offer customers better value than the competition does; the supplier needs to identify the key purchase criteria and attributes of the customer and customer actions need to be broken down into categories of actions and linked to internal process measures.

2.3.3 Customer Satisfaction Modelling

The nature of customer care is very much service oriented as most goods are consumed at the same time as services are experienced. To satisfy a customer, the supplier needs to have the services that the customer requires (Davidow, 1986). If the customer perceives a service in a certain way, but expected less, then the customer is satisfied, as the formula in Figure 2 shows. People and organisations that use professional services are traditionally prepared to pay high fees for the services, because of the uncertainty, importance, and risk involved. The customer wants to know that they get the required attention. A service firm that is able of project a caring image and backing that image with substance is likely to success (Maister, 1997).

$\text{Customer Satisfaction} = \text{Customer Perception} - \text{Customer Expectation}$

Figure 2. Customer satisfaction

The customer anticipates how the service will be performed and that is added to his/her expectations. Customers have previous experiences and, based on those experiences, customers expect a service to be delivered in a certain way, which can be considered company-controlled expectations creators. Uncontrollable creators are actions of the competition and word of mouth. Over time these company controllable and uncontrollable expectations creators together form the customer's standards. Customers compare services according to certain standards with which they are familiar and those do not necessarily relate to the service that is performed (Barsky, 1995, Friday and Cotts, 1995 and Oliver, 1996).

It is important for the supplier to learn to think as the customer does and to understand why a customer is buying certain supplier's products. This will make it easier to act in a way that persuades the customer to purchase services from that supplier. Ames and Hlavacek (1984) note that many managers lack the depth of understanding about how their customers operate and make their money. Frequently, companies focus on technicalities but neglect social relationships. Barsky (1995) notes that customer satisfaction is a feeling and can affect the customer's attitudes towards a product or a service. In a multilocation environment, it is necessary to remember that it is the people who collaborate (Maister, 1997).

Attitudes are important for the supplier as there is a strong relationship between attitudes and behaviour. The most common multi-attribute attitude model of customer satisfaction is as follows (Innis and La Londe 1994):

$$A_{jk} = \sum (I_{ik} \times B_{ijk})$$

where i = an attribute or product characteristic
j = a brand
k = a customer or respondent

A_{jk} = customer k's attitude score for brand j

I_{ik} = the importance weight given attribute i by customer k

B_{ijk} = customer k's belief as to the performance on attribute i by brand j

In the present study, the individual attributes for the services, i.e., brands were not collected, but interviewees were asked to judge each of the services as a whole. Measuring purchase intentions is relatively straightforward and can be done merely by asking about products purchased from major vendors (Innis and La Londe 1994). In this research, not all the vendors could be covered and therefore the interviewees were asked to rate the likelihood of repurchase. This is very similar to the method used by Innis and La Londe (1994).

2.3.4 Employee Satisfaction

According to Heskett *et al.* (1990, 1994 and 1997), employee satisfaction drives customer satisfaction and customer intentions to continue to use services, as for example in the telecommunications with American MCI Communications, where a statistically significant relationship between these factors has been found. In Figure 3, the motivational spiral describes the link between employee motivation and performance. Heskett *et al.* (1997) describe this relationship between customer satisfaction and employee satisfaction as a mirror that reinforces positive relationships between customer and employee. High morale leads into economic success. On the other hand, failure in the marketplace leads to low motivation (Heskett *et al.* 1990, Maister, 1997).

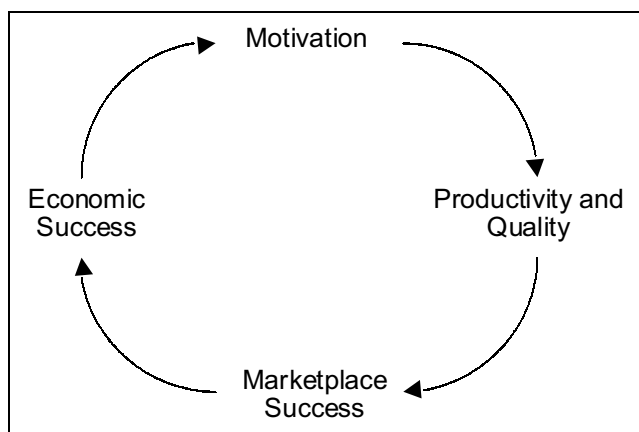


Figure 3. Motivational spiral

A low employee turnover reduces the need to hire new employees and therefore company gets a better return on their personnel investments. Frequently, measures of employee turnover concentrate on costs of recruiting and training, but employee turnover results in a loss of productivity and decreased customer satisfaction. Psychological compatibility should be taken into account in recruiting. Particularly in the service industry, people are an important asset of a company. Caring about the customer is a by-product of internal relationships and culture. The way customers are treated is closely linked to the way employees feel about their jobs and work environment and is reflected in the morale, motivation, and turnover of employees. Common reasons for losing good employees include the company's setting of high standards without providing the tools and capabilities to achieve those expectations. (Riggs, 1983, Wellemin, 1984, Brown, 1992, Järvelin *et al.*, 1992, Glanz, 1994, Heskett *et al.*, 1994 and 1997, Petrozzo and Stepper, 1994, Barsky, 1995, Griffin, 1995, Morris, 1996, Maister, 1997, Reichheld, 1997).

As employees are the service providers to the customer, they have to be taken good care of. This includes fostering personal development, providing empowerment and pay in relation to achieved

outcomes, as well as necessary time, tools, and support (Griffin, 1995, Heskett *et al.*, 1997). Grant and Schlesinger (1995) note that the difference in productivity of the top-level performers compared to average or low-level performers could be quite large, which highlights the importance of recognition of top-performers.

One of the most common complaints from customers in both consumer and business-to-business services relates to changes in customer-contact persons. Particularly in fast growing companies with low employee turnover are likely to rotate their employees around the company in order to promote customer-contact persons and manage growth. The customer-server relationship can help to strengthen relationships between customer, server, and the service firm. Over time, employees become more familiar with customers' needs and how to meet them. These customers have a stronger tendency to complain, which allows greater opportunity to recover errors. On the whole, lower costs and higher productivity can be achieved as unnecessary operations can be ignored (Griffin, 1995, Heskett *et al.*, 1997).

Customers and employees evaluate a company's recent performance similarly on dimensions that are important for the customers: ease of doing business, competence of service people, timeliness of the service, service representatives' availability, and interest displayed by service personnel in helping customers. Customer service personnel may be in the best position to collect data from customers and organise it into information (Heskett *et al.*, 1997). According to Brown (1992), frontline employees can predict with 90 per cent accuracy the timing and the nature of customer complaints. Frequently, customers and employees agree about a service problem.

High performing (Barker, 1999) salespeople are more innovative, more fulfilled by their jobs, more loyal, and more willing to take risks than low performance salespeople. In non-selling behavioural performance constructs, the high performance sales force appears to be more willing to accommodate customer's needs, which is likely to give them a competitive edge in building long-term relationship. On the whole, it is unlikely that everyone in a company will have the same view of the customer (Saunders, 1999).

2.4 Customer Loyalty

Oliver (1996) defines customer loyalty as follows:

Customer loyalty is a deeply held commitment to rebuy or repatronise a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behaviour.

According to Liljander and Strandvik (1992), customer satisfaction and repurchase intentions correlate positively. They found that it may be more beneficial to concentrate on influencing customers' experiences than altering their expectations in their research set-up.

Reichheld and Sasser (1990) and Reichheld (1996) have studied customer lifetime value and the value of building customer loyalty by listening to their complaints, anticipating their defection, and understanding why customers move to competitors. Customers remain loyal because of the value they receive from the supplier. Customer retention means continuing an active relationship with a customer (Cannie, 1994, Naumann, 1994, Heskett *et al.*, 1997, Burgeson, 1998, Clemmet, 1998).

Zeithaml *et al.* (1996) state that recent research offers some evidence that service quality and customer satisfaction positively affect the customer's behaviour. Customers, who have no service problems have the strongest levels of loyalty intentions. Nevertheless, their intentions to pay more are not significantly higher than customers who are experiencing service problems that are solved satisfactorily. Therefore, companies willing to improve services, particularly beyond the desired service-level, should do so in a cost-effective manner.

Companies aiming for customer loyalty tailor their offerings to customers to fit customer demands. Products or services are delivered to customers with minimal inconvenience and at competitive prices. Fulfilling customer demands can be expensive, but these companies typically look at the

lifetime value of the customer. The customer may additionally have to pay extra for premium service (Treacy and Wiersema, 1993; Wiersema, 1998, Anderson and Mittal, 2000).

2.4.1 Customer Satisfaction and Customer Loyalty

Customer satisfaction means that the customer's needs are met, product and services are satisfactory, and customers' experience is positive (Friday and Cotts, 1995, Gitomer, 1998). According to the definition, customer is satisfied when only minimum has been done for the customer. If a customer is said to be satisfied or happy about a purchase, the customer's overall feeling and experiences must be neutral or positive. Customer satisfaction itself is not an indication that there will be customer retention. A loyal customer is a customer whose expectations are met or exceeded and they proactively refer the supplier. The nature of loyalty has changed over time in society; nowadays it is based on mutually earned loyalty by the continued delivery of superior value to the customer. Customer loyalty can be measured and analysed to minimise customer turnover and to increase the growth of key accounts. Griffin (1995) defined a loyal customer as a customer who regularly repeat purchases, purchases across product and service lines, has some level of immunity to competitors, and refers to others (Gouillart and Sturdivant, 1994, Hepworth and Mateus 1994, Wellington, 1995, Reichheld, 1997, Dickey 1998, Gitomer, 1998).

Kaplan and Norton (1996) propose that managers should have a clear idea of their targeted customers and a specific set of core outcome measurements such as customer satisfaction, retention, and profitability. Customer satisfaction measurements have frequently yielded results suggesting that the relationship between customer satisfaction and customer loyalty is not constant. According to recent research, this link has proven to be the least reliable. Aggressive pricing policies could lure customers away from excellent service providers, which can affect short-term measures (Heskett *et al.*, 1997).

Hallowell's study (1996) illustrates the potential impact of customer satisfaction on profit in the banking industry. Analysis provides an indication of the increase in profit resulting from an improvement in customer satisfaction, where the causality hypothesised in the service management literature exists. Hallowell (1996) states that the relationship among customer satisfaction, customer loyalty, and profitability warrants further research.

According to Ruyter and Bloemer (1999), the relationship between loyalty and satisfaction has remained equivocal. This may be even truer for services that are delivered over longer periods. Oliva *et al.* (1992) argue that the relationship between service satisfaction and customer loyalty is non-linear. Anderson and Mittal (2000) argue that the links between customer satisfaction and customer retention can have asymmetric and non-linear aspects. Heskett *et al.* (1994 and 1997) propose that job satisfaction and customer satisfaction are closely related. Furthermore, Heskett *et al.* (1997) claim that there is direct and strong relationship between profit, growth, customer loyalty, customer satisfaction, value of the goods and services delivered to customers, and employee capability, satisfaction, loyalty, and productivity. Oliver (1996) also states that quality, satisfaction, and loyalty have an impact on profits. Ruyter and Bloemer (1999) in their attempt to extend knowledge about loyalty in services by including value attainment as a factor, argue that, in cases of relatively high levels of satisfaction, satisfaction would be the most important determinant of customer loyalty. However, in cases of extended service encounters, it may not always be possible to attain high levels of satisfaction.

Extended service encounters (Price *et al.*, 1995) have the following characteristics as they represent interpersonal relationships: duration, an affective or emotional content, and the spatial proximity of service provider and customer. In these encounters, value attainment and positive mood may have an additional impact on customer loyalty intentions (Ruyter and Bloemer, 1999). Nevertheless, Ruyter and Bloemer (1999) studied the simultaneous effects of satisfaction, value attainment, and mood on customer loyalty, as there is some empirical evidence of an interaction effect among value attainment, mood, and consumer evaluations of the service experience. The relative importance of value attainment is considered to be greater than the that of mood and therefore it is likely that value attainment similarly has a stronger impact on the satisfaction-loyalty relationship than mood. However, more research is required on the conceptual difference between satisfaction and mood.

2.4.2 Service Satisfaction and Loyalty

Oliva *et al.* (1992) propose that the relationship between service satisfaction and loyalty is non-linear. However, in cases of high satisfaction levels, a direct relationship with loyalty exists. Figure 4 shows that when consumers are not maximally satisfied, value attainment and mood have an influence on loyalty. The influence of value attainment and mood is outside the scope of the present study, because the present study was conducted in a business-to-business environment.

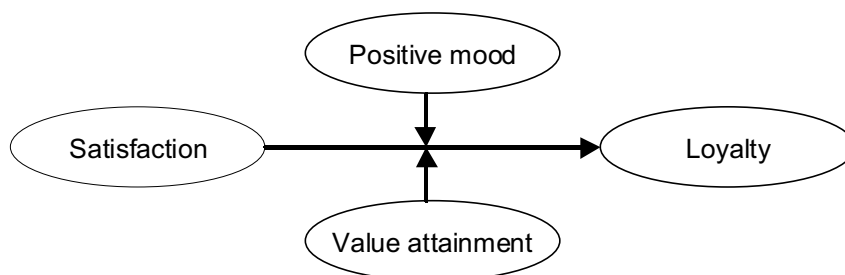


Figure 4. Conceptual framework of satisfaction, positive mood, value attainment, and loyalty (Ruyter and Bloemer, 1999, p. 327)

Oliva *et al.* (1992) additionally point out that customer's behaviour lags behind customer satisfaction, which makes it increasingly complicated to model the customer satisfaction-loyalty. They propose that the satisfaction-loyalty relationship can be either linear or non-linear depending on the level of customer involvement. Any enhancement of service is regarded as investment. As a supplier has documented all service encounters, it should establish what is the relation between customer satisfaction and loyalty on all the major dimensions of service. In practice, the supplier can then look at loyalty and identify key non-linear variables of services. In key variables there should exist three types of variables: variables whereby the supplier underperforms compared to the competitors, variables from which major increases in loyalty can be gained for relatively small investments, and increases in service that can be made by drawing on assets of the firm that are relatively inappropriate for the competitors.

Although most marketing research has focused on frequently purchased package goods, i.e., brand loyalty, the loyalty concept is similarly important for industrial goods (vendor loyalty) and services (service loyalty) (Dick and Basu 1994). According to Dick and Basu (1994), from the point of view of attitude-behaviour consistency, the stronger the relative attitude toward a brand, the more likely the individual is to overcome countervailing social norms and situational contingencies such as incentives for brand switching through reduced prices.

Prus and Brandt (1995) suggest that customer loyalty is reflected by a combination of attitudes and behaviours. Attitudes include intention to buy again, willingness to recommend the supplier, and a resistance to switch to a competitor. Customer behaviour includes repeat purchasing, purchasing of more and different products or services from the supplier, and recommending the supplier to others.

The criteria for loyalty measurement include customer behaviour, intended customer behaviour, and the factors that impact customer behaviour. Customer behaviour relates specifically to actual customer buying and referral activity. Customer behaviour can be used to validate previous intended behaviours and the economic models developed. Intended customer behaviour is what the customer tells the supplier that they intend to do. The factors affecting customer behaviour can be used for forecasting what the customer will do in the future. Among these factors are the customer's perception of the supplier's knowledge of customer needs, product, and service knowledge, appropriateness of product recommendations, postsale follow-up, and effectiveness of communication (Peck, 1997).

In the service environment, perceived service quality is viewed as a key determinant of satisfaction with potential consequences for repeat purchase. An industrial vendor may focus explicitly on customer satisfaction. Customer satisfaction has been identified as a key driver for customer loyalty

(Finkelman and Goland 1990). In addition, managing interpersonal relationships and creating industry-wide networks may facilitate strengthening of the repeat-purchase relationship (Dick and Basu 1994).

There is a close relationship between customer loyalty and service quality (Wallace 1997). Several customer satisfaction variables significantly affect the customer's global customer satisfaction (Innis and La Londe 1994). Customer service attributes received high ratings for the importance to customer satisfaction in a business-to-business environment study in retail business (Innis and La Londe, 1994). These attributes for the physical distribution of customer service were rated higher than many marketing attributes. Kristensen and Kanji (1998) and Kristensen *et al.* (1992) have established a model linking customer satisfaction to the profitability of a company. They defined customer satisfaction as:

$$CSI = \sum_{i=1}^n \omega_i c_i$$

where, CSI is the Customer Satisfaction Index, n is the number of quality parameters, ω_i is the importance of a given parameter and c_i is the evaluation. Profits can be described as follows:

$$\Pi = \text{Likelihood of buying} \times \text{Quantity bought} - \text{Costs}$$

where quantity bought is measured in sales price.

The likelihood of purchasing is the loyalty function, which is presented as follows:

$$L = L(\zeta_1, \zeta_1, \dots, \zeta_n)$$

where

$$\zeta_i = \omega_i (c_i - c_i^*)$$

where c_i^* is the satisfaction of parameter i for the main competitor. Therefore, the elements of the loyalty function are related to the competitive position of a given parameter combined with the importance of the parameter. Therefore, the customer may be satisfied, but because of the competition, loyalty could be low (Kristensen 1998).

When customers buy, they go through a purchase cycle, which consists of awareness of the product, initial purchase, post purchase evaluation, a repurchase decision that includes a positive attitude towards the product, and actual repurchase. For loyalty to exist, it is necessary that the product or service has high attachment compared to a potential alternative, and the customer repeats the purchase. After attachment to the product or service, a second factor determining loyalty is repeat patronage. Four loyalty types emerge with the cross-classification of attachment (low and high) and repeat purchase patterns (low and high): no loyalty, latent loyalty, inertia loyalty, and premium loyalty. Inertia loyalty is buying based on a habit, latent loyalty depends on situational effects rather than attitudinal influences. Premium loyalty is the preferred type of loyalty combined with high attachment and high repeat purchase (Griffin, 1995).

Normally it is cheaper to retain existing customers than to attract new ones (Tschohl, 1995). According to British Airways, it costs six times more to acquire a new customer than to keep an old one (Wiersema, 1998). The benefits of loyalty are cumulative and long-term, because it becomes easier to serve an existing customer. Increased loyalty among customers brings savings to the company in the form of reduced marketing costs, lower transaction costs, reduced customer turnover expenses, increased cross-selling, more positive mouth-to-mouth reports, and reduced failure costs (Griffin, 1995). Therefore, sales margins to existing customers should be higher. Sales margins can be even higher if existing customers received price reductions, as frequently these customers are less price sensitive to new products and monetary margins increase from overall relationship. Companies with long-time customers can frequently charge more for their products and services because of the customers' confidence in the business (Reichheld and Sasser, 1990).

The greatest impact of the efforts to retain customers comes through positive referrals, which is valid for both industrial and consumer products. According to a study for the US Office of Consumer Affairs, a satisfied customer tells five people about their experience and a dissatisfied person tells eleven people about his experience (Heskett *et al.*, 1997).

Nowadays, experience shows that the cost of winning new customers is becoming increasingly expensive. Before a company can make a sale, it must be familiar and recognisable to the customer. Business markets are unlikely to be one-off deals. Key decision factors in most industrial buying situation (Ames and Hlavacek, 1984) include special capabilities of a product, consistent quality, helpfulness of the relationship between the customer and supplier, time of delivery, previous experience, price, and cost-benefit value. In cases of large investments, sales occur after extensive negotiations and the first sales may be merely a test prior to larger deals (Ford *et al.*, 1998). In long-term relationships, honest facts will be more beneficial in loyalty business, as customer will find out the facts anyway. The most critical time for trust building may be the first encounters; not overpromising is one the ways to foster trust between customers and supplier. The customer's every purchase has an effect on the customer relationship and customer loyalty. When a sale is made, the customer buys together with the product a perception it has of the product and the company (Griffin, 1995).

Gronholdt *et al.* (2000) have studied the relationship between customer satisfaction and loyalty. In the study, data were obtained from the pilot carried out by European Customer Satisfaction Index (ECSI). Gronholdt *et al.* (2000) studied latent customer satisfaction and loyalty in consumer markets that also included mobile telecommunications markets. Gronholdt *et al.* (2000) found that regression analysis revealed a significant relationship between customer satisfaction and loyalty, including the consumer markets of telecommunications companies. They conclude that the more competitive the market, the more sensitive customer loyalty is to changes in customer satisfaction and that ECSI has the potential to become a platform for benchmarking.

Martensen *et al.* (2000) it was observed that, in Denmark, relatively new markets have greater customer satisfaction and loyalty than previous monopolies, but less than well-established markets. The lowest index values were received for perceived value, which was even lower than the customer satisfaction index. The index for products was higher than the index for service. Martensen *et al.* (2000) point out that industries in which it was simple to evaluate the product, customer loyalty is driven by the product itself. However, in areas that are more complex to evaluate, loyalty is image-driven. In the fixed net telecommunications and mobile phone telecommunications markets, company image has the greatest impact on customer satisfaction and loyalty.

2.4.3 Loyalty and Profit

The impact of customer satisfaction on customer loyalty is not the same for all industries (Fornell, 1992, Anderson and Mittal, 2000). Heskett *et al.* (1997) describes customer satisfaction and customer loyalty as in Figure 5, where they do not vary directly. In situations where customers have a range of choices, a relatively low cost of changing supplier, few government regulations limiting competition, and few loyalty-promotion programmes seem to produce curves similar to those relating to automobiles, as in Figure 5 (Jones and Sasser, 1995, Heskett *et al.*, 1997).

If competition is limited and switching costs are raised, the curve may begin to resemble the local telephone curve in Figure 5. Customers become captives, a situation that is referred to as false loyalty. The customer appears to be loyal but that is due to the lack of good substitutes, but more sophisticated customers focus on service levels (Davidow, 1986, Jones and Sasser, 1995, Burgeson, 1998). Particularly in the business-to-business environment, switching barriers can prevent even dissatisfied customers from switching to a competitor (Fornell, 1992 and Barsky, 1995). Strategies aim to achieve a competitive edge over the competition. In order to be sustainable, it may be necessary to build protective barriers around a company and its products. This can be done by ensuring a fit between the company and its environment, creating a market-responsive organisation, and enabling strong customer and supplier relationships (Wellington, 1995). If there is competition and reduction in switching costs, this may result in an immediate loss of customer loyalty. Organisations that have not selected their segments frequently attempt to please everybody,

which can result in too many merely satisfied customers (Porter, 1985, Jones and Sasser, 1995, Heskett *et al.*, 1997).

In order to transform customers into loyal customers, a supplier can study its customers. A supplier can also construct barriers to switching, which may be economic, physical, or psychological. Barriers make first time sales for the supplier more difficult but can be eliminated by external forces (Fornell, 1992). In addition, the supplier can hire and train its customers for loyalty, try to motivate its staff, and use marketing to create loyalty (Griffin, 1995).

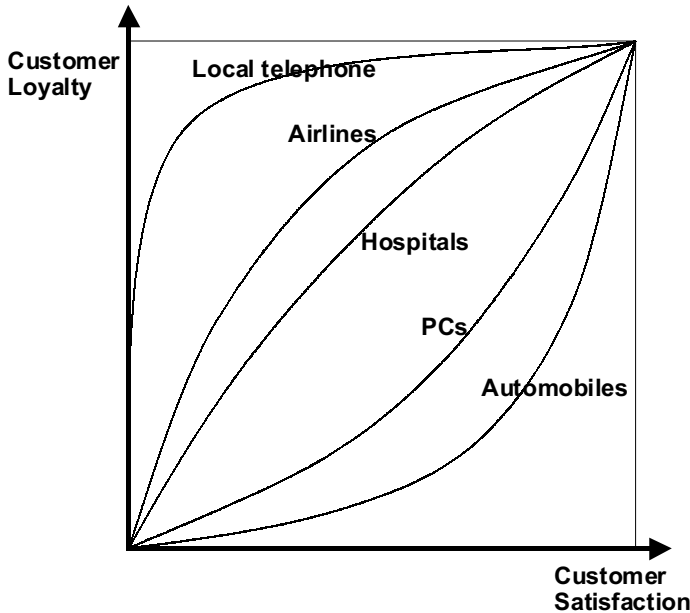


Figure 5. Customer satisfaction-loyalty curves in different industries (Jones and Sasser, 1995, page 91)

People become loyal customers in stages, according to Griffin (1995) and Vavra (1995). In the first stage, the prospective customer becomes a suspect, who may be anyone that might buy the product or service. In the second stage, a prospect must have a need for the product or service. In the third stage, the customer is a disqualified prospect as the company has discovered that the customer does not need the product or does not have the ability to buy the product. First-time customers are those who have bought once and repeat customers have bought twice or more. A client purchases regularly and supplier has ongoing relationship with this customer. The customer as advocate is the last stage. An advocate purchases regularly as a client, but additionally encourages others to buy from the company. An inactive customer has bought from the company, but has not purchased from the company for a period that is longer than the normal purchase cycle (Griffin, 1995).

In Figure 6, apostles are customers who are loyal and also refer the services to others. Word-of-mouth is an effective measure of loyalty, as the one giving the reference has no financial motive for doing so. Customers that have heard word-of-mouth recommendations need less selling time, have greater loyalty potential, and are ready to buy. Apostles wish to keep the company in business and if the supplier performs, the advocate will look good in the eyes of the customer. Mercenaries are those who go for the lowest price no matter what. Hostages are those customers that are not loyal, but who are forced to purchase the service. Terrorists are dissatisfied, they have the option of using other services and tell others how dissatisfied they are with the supplier (Jones and Sasser, 1995, Bhoté, 1996, Heskett *et al.*, 1997).

Many people question if it is sensible to strive to attain total customer satisfaction. The reasoning behind this is perhaps the assumptions that it is enough to satisfy customers and investment in

completely satisfying a customer is rarely worth it. Based on that improvement, efforts should be concentrated on customers that rank lowest in satisfaction surveys (Jones and Sasser, 1995 and Heskett *et al.*, 1997).

Measurements of the impact of customer satisfaction on loyalty and profitability suggest strategies for investing in customer satisfaction (Jones and Sasser, 1995, Prus and Brandt, 1995, Heskett *et al.*, 1997). The measurement suggests that the most important groups would be apostles, near apostles, and terrorists. Neutralising terrorists seem to produce the highest return result, as they have the highest potential negative value. Terrorists spread negative information about the supplier. If this can be prevented, the negative advertising would also stop. The second highest returns on investment are produced by apostles and near apostles. Apostles can be an extension of the sales department and for the same reason near apostles may be a good investment. Maintaining apostles could require merely thanking them for the business they bring, but because of their value, extraordinary efforts may be justified. Near apostles represent the least certain target group, as it depends on individuals whether or not they tell others about their satisfaction. Apostles' behaviour may be more dependent on the social behaviour of an individual and therefore, it may not depend on the supplier's capabilities to create apostles (Jones and Sasser, 1995, Heskett *et al.*, 1997).

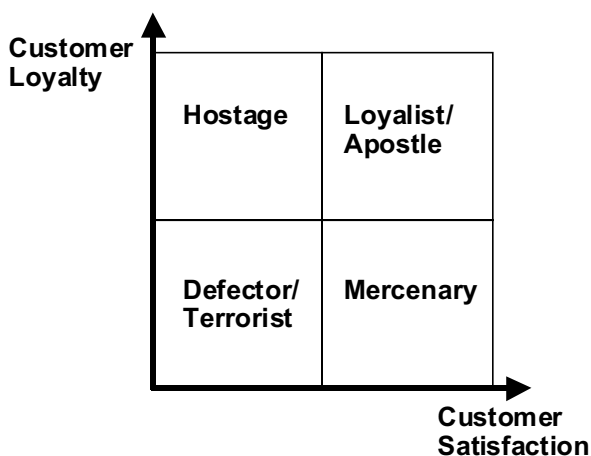


Figure 6. Different kind of customers (Heskett *et al.*, 1997)

Loyalty programmes should be selective and targeted exclusively at major customers as it should reward long-standing key customers rather than trying to buy customer loyalty (Wellington, 1995, Quinn, 1996). The success of the loyalty programme can be measured by first, second, and third-order effects. The first order effect is the creation of customer loyalty. Second order effects are growing revenue, declining costs, and increased employee retention. Third order effects can be seen as increased profits. Traditional accounting causes problems for customer loyalty. Biased accounting methods yield price distortions that disrupt the calculations of economics associated with customer loyalty and can lead into decisions that can actually reduce loyalty (Wellington, 1995, Griffin, 1995, Maister, 1997, Wiersema, 1998). In the case of a loyal customer, the customer knows the basics of the products and services, and efforts can be directed towards new features and elements. It is difficult for companies to see the profitability of loyal customers, as accounting systems are designed to show short-term gains and not to help tracking the benefits of maintaining a relationship with the customer for long time (Griffin, 1995). Griffin (1995) highlights the importance of the second buy as it is done based on a new set of criteria. Customers repeat purchases with a substantiated preference about the purchase. Supplier's aim (Heskett *et al.*, 1997) is to increase shares of purchasers that have biggest need for a product or service or who tend to build a strong loyalty.

According to Wiersema (1998), concentrating on the strengths rather than weaknesses is the most effective way of developing customer loyalty. Successful companies have initiated the transition to customer-loyalty by revamping their core process, changing the measurement and reward system, and exercising selectivity with customers. In order to establish one-on-one rapport with customers

and assure customer that there is someone who knows and cares about them, companies have established a single point of contact in which an account specialist handles all the concerns of a particular customer.

In many industries, suppliers have situations where winning the initial contract has an advantage in obtaining the longer-term follow-on business. Ames and Hlavacek (1984) have identified that patents and proprietary products, non-interchangeable parts, inventories at economic minimum, and cost of retraining represent ways of creating strong links for follow-on business. If a supplier can influence the specifications of the initial order, the supplier can be presented as the only one with the necessary performance capabilities. Without strong links between initial and follow-on sales, a supplier should not price low.

Glanz (1994) has identified regular communication, service guarantees, personalised service, customer education, and extraordinary recovery as ways to improve customer retention. When customers (Wayland and Cole, 1997) are given an opportunity to influence the design or delivery of a product, they will usually become loyal purchasers.

2.4.4 Loyalty and Defected Customers

Unresponsive service departments are considered responsible for more customer dissatisfaction than the original source of complaint (Anonymous, 1987). Frequently, in order to satisfy a customer, it is enough to listen to the customer (Wiersema, 1998). Hepworth and Mateus (1994) found that up to 40 per cent of customer dissatisfaction is due to problems caused by the customers themselves. Customer dissatisfaction is linked to the negative experiences with an organisation and the extent to which negative experiences result in customer defection should be measured. Customers who contact a supplier do not represent the entire customer base. The majority of customer-initiated responses derive from negative experiences and they should be analysed, but strategic change should not be based on those. A proactive approach involves additionally actively contacting customers who do not contact a supplier to complain or initiate contact (Naumann, 1994).

A supplier needs to seek early customer feedback. Keeping the customer satisfied requires that the supplier identify the dissatisfaction in the customer organisation, respond to it, recover the situation, and provide something extra for the customer. Defected customers can be used as an early warning signal, and those customers should be asked why they left the supplier. With the use of information technology, a supplier can continuously analyse trends and management can be alerted if a pattern of customer loss begins to develop (Jeffery, 1996). In continuous business, companies can form groups that deal with customers who wish to discontinue their retention (Reichheld and Sasser, 1990, Griffin, 1995, Zeithaml *et al.*, 1996, Peck, 1997). Primarily, customers wish to have a recovery that solves their problem; the apology is not so important. According to Wellington (1995), companies that have adopted continuous and gradual improvement tend to be better placed than other companies to deal with issues that make customers dissatisfied. Customer feedback and discussions with the customer are important means of maintaining customer loyalty. If there is no feedback coming from the customer, things are going wrong and customers could be leaving rather than continuing business. The most effective ways of keeping customers is to make it easy for them to give feedback. Repairs, refunds, and warranties are frequently sources of problems; reducing unnecessary hassle can be beneficial (Lele and Sheth, 1987, Sewell and Brown, 1990, Griffin, 1995, Gitomer, 1998).

Studies show (Cannie, 1994) that if customers have an opportunity to talk about problems that they experience with products or services, it increases the likelihood of future purchases. Customers who leave (Griffin, 1995) normally create more distance between themselves and the supplier. Signs of this kind of behaviour are: customer approval becomes slower, access to upper-level management decreases, flow of customer data slows, plans for future work become shorter-term, products or services are discontinued, and volume of business with the supplier is reduced. A slow-paying customer (Riggs, 1983) could be a sign of an unhappy customer. In high-technology companies, customers normally have the option of not approving or accepting installations until they are completed successfully.

Defected customers, who can be either partially or completely defected, know what is failing in the supplier's value proposition. It is worth prioritising customers and seeking to retain core customers. In order to retain their core customers, suppliers can discover who are the most profitable and loyal customers, which customers place the greatest value on the supplier's offers, and which of the supplier's customers are worth more to the supplier than to competitors. In order to act sufficiently early, a company should define what defection means and when actions should be taken (Cannie, 1994). The key to customer loyalty is to create superior value for the customer. The key to value creation is learning, and customer defections frequently provide excellent opportunities to learn from failures (Reichheld and Sasser, 1990, Oliver, 1996, Reichheld, 1996 and Heskett *et al.*, 1997, Wiersema, 1998, Rytönen, 1999). There are three types of company that do not take the time to build a beneficial relationship: one-time buyers, self-sufficient, control-obsessed companies, and companies that have no patience (Wiersema, 1998). If a customer is dissatisfied and loud, it may be better for the supplier if the customer is advised to choose another supplier (Reichheld and Sasser, 1990, Reichheld, 1996, Heskett *et al.*, 1997).

Total customer satisfaction can be achieved without perfect design and delivery of services, but this requires service recovery capabilities. As services are performed and consumed frequently in the presence of a customer, it is evident that mistakes do happen. With regards to services, good service recovery in ways that exceed customers' expectations may produce higher satisfaction levels than services provided well at first. In certain industries (Hepworth and Mateus, 1994), the customer loyalty rate is higher after a problem has been found and resolved to the customer's satisfaction than if there are no problems. However, over half of the efforts to respond to customer complaints merely reinforce negative reactions to a service. Service recovery shifts the emphasis of the cost of pleasing the customer to the value of doing so. For the customer-supplier relationship to become productive and profitable, it is necessary that the service provider is able consistently to deliver high quality to the customer. In this event, successful service recoveries are of limited value, as the customer feels that the risk of not getting the expected service has become higher (Heskett *et al.*, 1997). The income over the lifetime of a customer relationship, when extended by the favourable word-of-mouth resulting from effective service recovery can frequently be several times the cost of handling customer complaints and providing effective service recovery (Hart *et al.* 1990, Sewell and Brown, 1990, Glanz, 1994, Griffin, 1995, Heskett *et al.*, 1997).

Customer service personnel should be trained to have the necessary skills, motivation, and authority for successful service recoveries. Service recovery is an important part of service culture for providing service under any circumstances. When problems arise, it provides an opportunity to do extra for the customer and win the customer for good. Problems can arise with a new first-time customer relationship. If a problem (Griffin, 1995) occurs during the first six-months, the customer will assume that these problems will occur frequently. It seems that service recovery skills are particularly difficult for companies that have adopted quality-control ideas and have streamlined their service-delivery systems. Variation in service provision is inevitable. Service is performed (Patton, 1980) by individuals, and therefore service procedures are inconsistent, variable, individualised, and frequently imprecise. Companies that are capable of making good service recoveries are normally those with service guarantees. According to Hart (1988), good service guarantees can be characterised as unconditional, easy to understand, meaningful, easy to invoke, and easy to collect (Hart *et al.*, 1990, Brown, 1992).

2.4.5 Customer Relationships

A large number of studies of the relationships among companies within business networks have been conducted by the International (Industrial) Marketing and Purchasing (IMP) group (Holmlund, 1997, Holmlund and Strandvik, 1999). The interest in relationships has developed since the beginning of the 1980's, chiefly as a result of the research conducted by the IMP group. Most research conducted by the IMP group is inductive in nature; the studies concentrate on such concepts as bonding, adaptations, and development of trust and mutuality (Järvelin, 2001). In recent years, the interest in relationship marketing has increased the focus on long-term relationships (Järvelin, 2001). According to Holmlund (1997), many business markets are characterised by stability and long-lasting relationships between companies.

Business-to-business service relationships have attracted relatively little attention in marketing literature. Relationships between buyer and seller represent a typical way of organising the exchanges in business-to-business services. Another important reason for studying business services is the opportunity for a dyadic view (Järvelin, 2001). Storbacka *et al.* (1994) note that there is lack of studies investigating customer relationship economics, i.e. the link between perception measures (service quality, satisfaction, and intentions) and action measures (purchase loyalty, purchase volume, word-of-mouth behaviour, and long term customer relationship profitability).

In industrial relationships and networks studies, a great deal of interest has been directed towards activities and resources. Recently, the evolving relationship perspective has encouraged a change in interest from service quality to relationship quality. In relationship satisfaction studies, the relationship satisfaction is seen as the outcome of the interaction within the business relationship. Therefore, relationship satisfaction is a concept linked to the relationship. Relationship quality can be studied from the seller's or the buyer's perspective or a combination of the two. Relationship quality and evaluation of business relationships can be seen to be an antecedent to such other concepts as value, satisfaction, trust, and commitment, which tie companies more firmly together. The concepts of trust and commitment are gaining more interest among network and interaction researchers, but the base on which they are built is not thoroughly researched. The network and interaction approaches study the buyer-seller relationship in a single company, dyad, or network, which has been found useful in analysing buyer-seller relationships. Although certain studies have applied a dynamic perspective to the relationship, the dynamic approach remains novel (Storbacka *et al.*, 1994, Holmlund and Strandvik, 1999, Leminen, 1999, Järvelin, 2001).

According to Grönroos (1993), the objective of relationship marketing is to establish, maintain, and enhance relationships with customers at a profit. In a relationship marketing perspective, the focus is not on service encounters as such. The encounter is seen as an element in an ongoing sequence of episodes between the customer and the service company (Storbacka *et al.*, 1994, Bitner, 1995, Holmlund and Strandvik, 1999, Leminen, 1999). Service quality and customer satisfaction can be experienced at both an episode and a relationship level. A satisfied customer is seen to create a strong relationship with the supplier, which leads to relationship longevity, i.e. length of a relationship. Relationship longevity is important for the supplier both from an efficiency and a profitability point of view (Storbacka *et al.*, 1994). In customer loyalty, building a lasting relationship is the key; customers are more likely to become loyal if they have developed a personal relationship with the company's staff. This relationship can be symbiotic and beneficial for both the customer and the supplier (Griffin, 1995).

Fulfilling customer's requirements, customising products or services to meet customer's needs, managing to select the customers from the marketplace, and implementing a customer-loyalty programme, if it is profitable, are seen as basic strategies for a successful partnership (Wellington, 1995). Wiersema (1998) considers that companies who know what they are able to deliver and focus on tailoring it to a specific model can create fruitful relationships with customers. While companies should tailor, producing too much variety can increase costs and ultimately drive the customers away.

When the partnership starts growing, it is important that the supplier focuses on the customer's customer. In an ongoing relationship, both parties should reap the benefits of the relationship. In a successful operational joint partnership, the supplier and customer should synchronise their information and technology. Ultimately, this can lead to business integration. The supplier should not limit its performance measurement merely to its own results, but it should also track its customers' performance (Wiersema, 1998).

Peck (1997) has identified certain measures of the strength of the customer relationship, including overall satisfaction, customer loyalty, customer recommendations, personalised support, responsiveness, speaking to appropriate people, following-up after a sale, knowledge of the customer's business, product knowledge, and new product information.

Identifying decision-makers in the customer organisation normally requires numerous visits to the customer organisation. While not every contact with the customer can be justified on a cost basis, a relationship is built by such contacts. This interaction assists the supplier in discovering the customer's real needs and reduces the possibility of misunderstanding the customer. In many cases, dissatisfaction derives from the supplier's misunderstanding of what is important to the

customer. Success is the measure of the relationship (Ames and Hlavacek, 1984, Griffin, 1995, Peck, 1997).

The development of a new relationship requires investment from both parties, and the relationship may generate revenue only after a long period. The costs should be less than the gained benefits, but relationship benefits tend to be more complicated and are frequently difficult to allocate to a particular supplier. Patterns of relationship development varies from industry to industry; it is not uncommon that when significant investments are required, the payback time could be several years. It seems that frequently companies realise the importance of the relationships to their suppliers, but the importance of the relationships to the customers is neglected (Ford *et al.*, 1998).

Companies can choose between loose and close relationships. In loose relationships, there is little interaction between the companies. Requirements by the companies are stable and can be satisfied normally by existing products with minimal adaptations in products and services. Close relationships make sense in case the costs are offset by the benefits. Close relationships decrease the independence of companies (Ford *et al.*, 1998).

Companies should consider costs relating to customer service as an investment. The money spent on customer loyalty can be little compared to cost of losing a customer (Reichheld and Sasser, 1990, Anderson and Mittal, 2000). Communication with the decision-makers must be maintained even after the purchase decisions have been made. Competitors make approaches to decision-makers constantly, and keeping the operational level satisfied is therefore not enough (Griffin, 1995).

In a competitive environment, it is important to maintain excellent relationships with the existing client base. Remaining successful in a highly competitive environment requires considerable creativity and effort. Frequent interaction with customers is essential for retaining current customers and may increase customers' purchases. A good relationship can be maintained through frequent visits, personalised contacts, and by improving quality assurance programmes and customer support (Smith, 1999).

Vavra (1995) identifies common objectives in customer communication programmes. They are to position the company, to inform and educate customers about products or services, to stimulate and reaffirm customer's purchasing, to make customers feel appreciated, and to help manage the company's perspective on issues. Customer relationship management programmes should focus on determining what marketing activities are important to developing relationships, and on the role of information systems in formalising and streamlining customer contact activities (Clemmet, 1998).

Selnes (1995) addresses the complementary role of satisfaction and trust in maintaining and enhancing the relationship between a supplier and a buyer, as they can possibly reduce the perceived risk. Relationship continuity does not require trust, but trust is a strong antecedent of the motivation to enhance the scope of relationship. Trust can be built by exchanging information, handling foreseen problems and conflicts, and flexibly adjusting products to the customers' demands. Satisfaction with products and services has been documented empirically as affecting the buyer's decision to continue a relationship (Fornell, 1992). Satisfaction is an evaluation of an outcome compared to a certain norm. Communication can be an important source of satisfaction, as it can lead to a shared understanding of performance outcome and expectations (Selnes, 1997). Storbacka *et al.* (1994) recognise other aspects of relationship strength than customer satisfaction, such as the existence of bonds between the customer and the supplier. Within the interaction approach and the network approach to industrial marketing, six different types of bonds are proposed. These bonds create effective exit barriers for the consumer. Commitment of the customers is another approach to achieving relationship strength. Companies need a systematic analysis of relationship configurations including services and channels used by the customer, and the episode configuration (Storbacka *et al.*, 1994, Berry, 1995, Holmlund and Strandvik, 1999).

Selnes (1997) found, in the case of a food producer serving Norwegian institutional markets, that communication increases both trust and satisfaction to the supplier. Therefore, an attempt from a supplier to enhance the scope of the relationship with a customer who is dissatisfied is likely to fail. Low or moderate levels of satisfaction and trust are seen as a reason why several suppliers fail to develop closer relationships with their customers. In cases whereby the customer is not able to evaluate quality, Selnes (1997) predicts that brand reputation, which is related to trust, drives loyalty.

More collaborative relationship thinking can provide potential solution, for example for the handling of the third party equipment, where the customer can act as a distributor for the products of the supplier. Better co-ordination can improve service levels and reduce inventories (Ford *et al.*, 1998).

According to Maister (1997), good relationship management is very important when it comes to making referrals. He found that only 10 per cent of all referrals were found to be cases where technical issues or results were given as a reason for referral. In 90 per cent of the cases, the reason for referrals were related to the relationship issues. In order to be successful, companies need a systematic approach; it must be measured, managed, there have to be tools, training available, and those involved must be rewarded.

For the supplier-customer relationship to flourish, pricing needs to be fair. The customer's perception of fairness is dependent on the way a product is presented and how utility is derived from it after purchase. Customers know the value of reliable deliveries. Only a co-operating customer and supplier can achieve high levels of supplier performance. Co-operation deepens with time; each side becomes more dependent on each other. Customers have learned that a multi-supplier environment does not guarantee supply, because most suppliers tend to run out of capacity simultaneously. Capacity problems can be overcome only through mutual capacity planning. In a stronger relationship, the customer becomes a unique market segment. If the customer is in a business where the prices decline steadily, the supplier attempts to reduce prices steadily, even if there is no market pressure. The customer in turn will compensate to the supplier that it has received deliveries in times of short supply during weaker times (Davidow, 1986).

2.4.6 Dimensions of Customer Relationships

Customer relationships can be divided into several dimensions. Wayland and Cole (1997) categorise the relationship value as follows:

- Customer portfolio management
- Value proposition design
- Value-added role
- Reward and risk sharing

According to Wayland and Cole (1997), customer portfolio management handles the selection and management of customer relationships. Value proposition design is concerned with a company's contribution to its customers' value chain. Added value role refers to a company's position within the industry's added value chain. Reward and risk sharing is tied to the basis on which customers and suppliers interact to create and share value. Companies can increase value for their customers and shareholders by choosing optimal positions that suit their markets best. The customer portfolio can be managed at three different levels: individual, group, or market level. New technologies nowadays enable the management of customers increasingly on an individual basis, but this requires a deeper knowledge of the customers and more investment in those customers.

Wayland and Cole (1997) claim that value proposition is the most common way that companies can increase the value offered to customers. A supplier can increase the value of its relationship with its customers by serving a larger part of the customers' value chain. This can be done by means of a core product, extended offer, or a total solution. A core product is a clear package. In total solution, the seller is involved in all or most of the buyer's activities related.

Value-added role (Wayland and Cole, 1997) relates to how the supplier can create value for the customer and how it is delivered to the customer. Value-added roles can be divided into product, process, and network managers. The product manager creates value by combining inputs into a product. The process manager's role involves maintaining several contacts continuously, and the supplier's aim is to supply a part of the customer's value chain. The network manager takes a central position, as the supplier acts as an intermediary that manages the flow of the value chain by matching buyers and sellers in order to achieve specific objectives.

Selecting a balance between risk and reward addresses the ways buyers and sellers create and share value (Wayland and Cole, 1997). Risk and reward sharing can be divided into neutral or market based rewards sharing, performance-based sharing, and outcome-based sharing. In performance-based sharing, buyers can create incentives for the seller based on its performance. Outcome-based sharing can be compared to a partnership.

Communication is an essential part of a relationship. The more the supplier is engaged in two-way conversations, the greater is the potential for establishing a bond between the supplier and the customer. Many high-tech products and services require face-to-face contacts (Wayland and Cole, 1997). According to Dijksterhuis *et al.* (1999), co-evolutionary effects of organisations can take place both within a company and between companies, and therefore interacting with only certain customer persons is not enough.

The seller-buyer relationship is a dynamic and mutual relationship. A close relationship does not necessarily mean a good relationship. The quality of a relationship depends on the seller and buyer and how much they wish to invest into the relationship. Buyer-seller relationships will frequently create even more value if effective means for collaboration are available. Normally, relationships are not "null-sum" games, and therefore the buyer and seller can gain by collaborating. The most important conditions for collaboration are bargaining power, appropriability, relationship management costs, and complementarity. Bargaining power is a reflection of the market structure. In a perfect market neither buyer nor seller has the incentive to invest in an extended relationship. Appropriability refers to the likelihood of making a return on the investment in the relationship. Relationship management costs include search, surveillance, monitoring, and ownership costs. Complementarity refers to competencies, resources, and knowledge brought into the relationship by the various parties (Wayland and Cole, 1997, Storbacka *et al.*, 1994).

2.4.7 Buyer-Seller Uncertainties

The buyer's situation is clear if the buyer knows what he needs. Normally, however, buyers have at least three kinds of uncertainties: need uncertainty, market uncertainty, and transaction uncertainty. A seller can attempt to take advantage of the buyer's uncertainties by the manipulation of uncertainties for the seller's benefit and use of its abilities. The seller's abilities include of problem solving and transfer ability. The importance of transfer abilities increases as the uncertainty declines (Ford *et al.*, 1998).

A seller's uncertainties include capacity uncertainty, application uncertainty, and transaction uncertainty. A buyer can also attempt to influence the seller by manipulating the uncertainties to his benefit and to use his abilities. A buyer's abilities include demand ability and transfer ability, which refers to the buyer's skill as a partner to transfer information on volume, timing, logistics skills, and ability to pay bills (Ford *et al.*, 1998).

The development of a relationship depends on the interactions between the individuals. Over time, both parties learn about each other's abilities and uncertainties. In a long-term relationship, mutual trust is important. Distance can also have a role to play in relationships. Relationships are valuable as they create efficiency and innovativeness for the company. Relationships can also be useful for gaining information and influencing others (Ford *et al.*, 1998).

Relationships evolve through stages, which include the pre-relationship stage, exploratory stage, developing stage, and stable stage. The pre-relationship stage is for checking if the other party is a suitable partner. In the exploratory stage, the buyer and supplier negotiate a purchase, but there is still a lack of trust, and concerns about commitment. The developing stage can be characterised as a period of mutual learning. In the stable stage, routines can be established and the relationship can be institutionalised (Ford *et al.*, 1998).

2.5 Product Support and After Market Services

According to Kotler (1997), product support services are increasingly becoming an area for competitive advantage. Some companies already make more than half of their profits in product support services. The customer is most concerned about an interruption in the service that they expect from the product and their worries can be specified into three areas: reliability, service dependability, and maintenance. In order to provide the most effective support, a supplier must identify the services that customers value most and their relative importance (Lele and Karmarkar, 1983, Lele, 1986).

According to Vavra (1995), as industries are deregulated, the structure and competitive mannerisms of the industries react in a certain way. Normally regulated industries are product or service focused, whereas deregulated industries are customer focused. Companies of regulated industries frequently focus on efficiency, and in deregulated industries the focus shifts to effectiveness.

Horelli (2000) claims that the Internet will make the price competition between different car dealers in USA even more intense and that this will force the dealers to find more efficient ways of making profits. After sales car services, and other ownership services are seen as a means of maintaining profitability.

2.5.1 Maintenance

The combined objective of maintenance management programmes is to provide plant availability at least cost and allow production of the highest quality. The more effective the maintenance control system is, the greater the percentage of total maintenance is planned. It has been estimated that over 85-90 per cent of plant maintenance and construction can be planned in advance. Maintenance management programmes can be divided into planned maintenance, both predictive and preventive maintenance, emergency maintenance, reliability improvement, maintenance cost improvement, and training (Niebel, 1985).

Maintenance, in general, has three objectives (Patton, 1980): care for property, customer satisfaction, and profitability. Customer satisfaction can primarily be obtained by means of equipment that is available, capable, and dependable. According to Niebel (1985), the objective of maintenance organisations is to maximise the availability of plant facilities in an operating condition allowing maximum performance cost effectively. Maintenance services (Patton, 1980) can be considered promotional and protective. Promotional services can win increased sales, and protective services are used to ensure that equipment is taken care of and that it performs to its maximum capability.

Many customers are willing to take care of as much of their maintenance themselves as possible. This kind of behaviour should be welcomed by the supplier, as it quickly takes equipment back into use and it satisfies the customer. Money and time are perhaps the two most easily quantifiable criteria for maintainability and maintenance. Money should be the most important; even military programmes use money as the principal measure (Patton, 1980).

Regan (1965) proposes that a company incorporate methods for maintaining equipment in operating condition while also working within the larger framework, offering a range of service benefits to its customers. Customer financing terms, management of orders and delivery of goods, conditions for order, cancellations, and reimbursements complement the narrower definition of after sales support. Regan (1965) also distinguishes between services between consumer goods and services required for the support of industrial products (Mathe and Shapiro, 1993).

The design function of a product is important because it translates customers' and support personnel's needs into maintainability design characteristics. Most maintenance problems are more effectively solved at the design level of equipment than at the level of maintenance training. In order to create a successful design, the front line employees must be involved in product development (Patton, 1980, Niebel, 1985).

According to Patton (1980), the following terms are specified:

Availability: The probability that a system or equipment will, when used under specified conditions, operate satisfactorily and effectively. Also, the percentage of time or number of occurrences for which a product will operate properly when called upon. Inherent availability considers only corrective maintenance time. Achieved availability includes preventive maintenance time, but with an ideal support environment. Operational availability considers total downtime, which includes administrative and supply times.

Reliability: The probability that an item will perform its task without a failure

Preventive maintenance: Actions performed in an attempt to keep an item in a specified operating condition by means of systematic inspection, detection and prevention of incipient failure.

2.5.2 Preventive Maintenance

Preventive maintenance (Niebel, 1985, Stonebraker and Leong, 1994) reduces equipment failures and emergency situations, and increases the service life of equipment. Predictive maintenance seeks to forecast failure of equipment and establish the ideal time for repair or replacement. Some companies have taken into use pattern recognition in order to anticipate problems before they occur. A company must continuously educate themselves about all aspects of their customers' businesses. As the company deals with numerous customers it can apply experiences from one source to another place (Wiersema, 1998). A widely used approach of preventive maintenance is the condition monitored maintenance procedure (Wellemin, 1984).

The objectives of preventive maintenance (Niebel, 1985) include minimising the number of failures of critical equipment, reducing the loss of production, increasing the productive life of all capital equipment, acquiring data of capital equipment so that decisions for repairs and replacement can be done in order to maximise ROI, permitting better planning and scheduling of maintenance work, and promoting the safety and health of the work force.

The operative personnel must be involved in the planning and scheduling of preventive maintenance to ensure that it occurs frequently and without disturbing the operations of the production equipment. Operative personnel can also perform routine maintenance and they should be aware of the early warning signs of equipment failure (Takatsuki, 1986, cit. Stonebraker and Leong, 1994).

Corrective maintenance: Unscheduled maintenance or repair actions, performed as a result of failures or deficiencies, to restore items to a specific condition.

Repair: The restoration or replacement of components of facilities or equipment as necessitated by wear, tear, damage or failure. To return the facility or equipment to efficient operating condition.

The majority of maintenance work should be planned and scheduled; only emergencies should be handled without advance planning and scheduling (Niebel, 1985). Whenever effective, data should be analysed manually, as it frequently provides more effective and timely guidance (Patton, 1980). Data gathering, statistical analysis, and reporting are important parts of maintainability and maintenance. Wellemin (1984) noted that reporting can be costly, but it can be even more costly if the information is not distributed.

A decision to replace a piece of equipment should be made by comparing the cost of keeping the old equipment in operation and the cost of its replacement. All systems should have a phaseout and termination phase planned as the last major programme action. Withdrawal can be most effectively done from the marketplace under planned conditions (Patton, 1980).

2.5.3 After Sales Support

Lele (1986) identifies the following aspects in the service support area:

1. Suppliers are manufacturing more reliable and more easily fixable equipment
2. Customers are becoming more sophisticated about buying product support services and demand for service "unbundle"
3. Customers do not like to deal with a multitude of service providers
4. Service contracts are becoming an endangered species
5. Customer service choices are increasing and this holds down the profits on service

At the time of sale, the buyer and seller have different kind of expectations. For the seller, the sales is a culmination of a long sales negotiation; it is time to collect monetary reward for the labours. Sales closure opens new opportunities with new potential customers and matters shift from the sales team to the production team. From the buyer's point of view, a sale is an initiation of a new relationship; the buyer is frequently concerned about support and the attention it will get wishes to continue to interact with the sales team (Vavra, 1994 and 1995).

After sales services include maintenance, repair, and upgrading. If these services can be offered at a fixed or guaranteed rate, they could be a significant competitive advantage. In maintenance, it is to be remembered that one way of solving the repair problem is to have defect-free products and then service can be bundled into the product price, which can also be of strategic value (Rothschild, 1984).

According to Wellemin (1984), after sales support has changed drastically in recent decades. Customers have become more dependent on efficient operation of suppliers' equipment, services are labour intensive and cost of labour has risen, products intended for the same markets are becoming more similar, customers are increasingly selective as they seek value for money, and social changes have reflected to services, for example when a service force works in the customer's premises, the supervision is frequently minimal.

The product-service package must be defined so that it maintains costs at a level acceptable to the market. It is necessary to develop economic analysis that enables estimates of life-cycle costs. In the USA, the concept of life-cycle costs has become relatively widespread in many industries (Mathe and Shapiro, 1993).

The relative importance of a product's material content decreases and the same applies to the manufacturing added value. For objects that are consumed, the share of logistical costs, including all the services provided at various stages such as transportation, maintenance, inventory, and planning has been growing. At the same time, supporting the tangible product has become more expensive to the supplier and to the customer. The initial purchase price represents only one element in the customer's total cost. Particularly for durable products, delivery and usage costs including maintenance represent a significant part of the total-cost price for the customer (Mathe and Shapiro, 1993).

After sales service is more than merely fixing what has gone wrong, which appears to be the primary function of many after sales service functions. Manufacturers should anticipate the after sales needs in product design, but experience shows that manufacturers do not incorporate customers' concerns actively enough at the product design phase (Mathe and Shapiro, 1993). In the case of durable goods, at least customer, dealer, third party provider of service, the manufacturer of the tangible product, and the supplier of parts and components can be involved in the after sales service operations. The traditional approach to after sales service centres is on technical intervention, where the focus is on improving technical tools and work methods. The approach of Mathe and Shapiro (1993) looks for increased overall efficiency between the supplier and customer. Service activities are defined at the design phase.

After sales service may not be profitable on its own, but is frequently a key determinant in the sale of the product itself. It has been estimated that the importance of services will grow in the future. Product support can be a basis for developing a close relationship between a supplier and its customers. For example, among the criteria in the purchase of computers by small and medium size companies, after sales service (maintenance) had the strongest influence on customer

behaviour. After sales service was followed close by the equipment itself. Difficulties related to a relationship between a supplier and its customer can be reduced by offering services that complement the product (Jackson, 1985, Pras, 1987, sit. Mathe and Shapiro, 1993, Simon, 1992, Mathe and Shapiro, 1993).

Mathe and Shapiro (1993) have, see Table 5, categorised a supplier's activities based on the gaining and retaining of the customers. All the supplier's activities for providing services can be referred to as "communication" or "physical management". Communication consists of integration of customer needs and information. Physical management can be divided into preparation for use and upkeep. Upkeep means here issues related to operation and maintenance. The product definition that underlines the time dimension is particularly applicable to services.

Table 5. Differences between gaining and retaining a customer as a function of time

Primary Activities of Service Mix: (Mathe and Shapiro, 1993, page 27)

Type of activity	Integration	Preparation	Information	Upkeep
Emphasis on gaining a customer	Consultation with the potential user at the equipment's conception stage	Trial loan of equipment	Distribution of technical – promotional literature and suggestions for usage	
	Development of prototype, keeping in mind customer constraints		Demonstrations and/or simulations	Description of maintenance installations and spare parts inventory
	Consultation with customer, taking into account customer's needs during design of 'product-service', including appropriate financing solutions	Creation of customer financing plans	Quick establishment of estimates and time-frames (estimate costs and performance attributes for customised or standardised product)	
Emphasis on retaining a customer	Adaptation of existing equipment to customer's schedules and integration with equipment already in use		Consideration of and response to customer requests	Intervention for repair and preventive maintenance
		Delivery, installation and equipment start-up	Advice and training in equipment operation and maintenance	Intervention for heavy maintenance and deferred repair work
			Distribution of technical literature on operation and maintenance	Renovation and reconditioning of all or part of the equipment
	Complementary equipment and/or services	Providing spare parts and complementary accessories	Advice to customers on the assembly of parts and accessories	Loan of replacement when customer's equipment is not available (e.g. in repair)

If tangible products are divided into consumer goods, durable goods of average complexity, and complex systems, it can be concluded that primary functions vary, but for more simple goods the information function is frequently limited (Mathe and Shapiro, 1993).

Ideally, a product is not only the physical output but also the portfolio of intangible services. Mathe and Shapiro (1993) identify areas where a supplier needs to support the service mix. As a company develops processes for tangible products, it needs to design the process for producing and delivering the service. Equipment and service availability goals play an important role when after sales support costs are determined, and form part of the technological plan. The purpose of a marketing plan is to tie tangible product and services together as a package. A human resource plan relates to resources, while a physical asset plan is concerned with facilities and inventories, and a capital resource plan integrates financing (Mathe and Shapiro, 1993).

Developing customer loyalty may require increasing the amount of contact with customers. After-sales provides a continuous link between the supplier and the customer. In the automobile car industry, if car owners are dissatisfied with the quality of maintenance services, over half of them could consider changing brands. Ineffective after sales service may be unprofitable and could lead to dissatisfaction among customers (Mathe and Shapiro, 1993).

Normally, companies have a variety of technological and service options for different dimensions of customer satisfaction. The particular composition of a service-mix depends on the management's decisions to optimise customer satisfaction and to minimise the cost (Mathe and Shapiro, 1993).

In the case of technical products, the need to communicate with the customer does not end with the sale. After sales communication can be critical for customer satisfaction. Only if the customer can use the product effectively, can he/she be satisfied and become a repeat buyer. One means of communication is through manuals. Inaccurate manuals have an effect on customer satisfaction, even they do not have effect on the technical capabilities of the product. Customer training is frequently required for many technical products and systems. Customer training falls somewhere between marketing and engineering. Training provides an opportunity to reinforce the selling efforts, at the same time providing accurate information on the technical capabilities of a product (Riggs, 1983).

2.5.4 Field Services

According to Riggs (1983), field service personnel are an extension to production, because they repair and fix products and also an extension to sales as they have lot of interaction with customers. Customers of high-technology products are particularly interested in the availability of timely and competent field services, which must be cost-effective. Personnel involved in after sales activities are additionally used for the installation of systems. Many companies with field services personnel offer maintenance contracts to their customers. Field services may be profitable, but many companies operate their field services at a loss, justifying this as a marketing expense. Field services are considered an extension of marketing because opportunities can arise for further sales in the form of upgrades, sales of additional options, or expansions of existing system. The service organisation can also provide valuable information of required engineering design changes. Normally losses lead to subsequent cost cutting, which frequently occurs in younger companies which are eager to satisfy their customers and thus overserve their customers (Riggs, 1983).

Field services should involve considerable interaction between marketing and production, as this service organisation carries a great deal of responsibility for customer satisfaction. Service personnel should adopt both of these worlds, both the view of marketing and production. Service managers in the field in high-technology companies face five major challenges: recruiting and retaining personnel, simplifying processes, scheduling, controlling spare parts inventory, and formulating policy relating to obsolete equipment. The growth generates growth demand for service personnel. The demand for service personnel can grow even after sales flatten. More effective processes may reduce the need of service personnel. One option is the usage of subcontractors, delegating to the customer the tasks is the most obvious alternative. Scheduling and particularly uneven shipments cause uneven workloads, which leads to overstaffing to meet the peaks. Spare part inventories are a large cost factor. As regards obsolete equipment, the main question is how

long a manufacturer should commit it to providing service to its customers. Too short periods compromise customer satisfaction and too long periods will damage the profitability of the company (Riggs, 1983).

Care management has a great deal to do with marketing. In the industrial world, the term 'marketing' can be interpreted as a business philosophy aimed at improving profit performance by identifying the need of customers and then designing and producing products and services that will enable the supplier to serve the customer more effectively than the competition can. The key dimensions of business marketing are as follows (Ames and Hlavacek, 1984):

1. Aiming for improved profit performance
2. Identifying customer requirements
3. Selecting customers
4. Designing the product or service package to make them match customer needs better than the competition

If there are few customers, they have more control and influence on the supplier, as in case of telecommunications. A narrow customer base leads to a closer relationship between the buyer and the seller than in a consumer market. When industrial customers' quantity requirements grow, they demand concessions. Industrial companies emphasise price and quality in their purchasing and they are normally aware of their needs. In comparison, household purchases are frequently guided by needs and wants that are less specific. Industrial decision making is additionally more complex when it comes to the number of decision-makers, who can be numerous, particularly if goods are bought formally from centralised organisation. Individuals are frequently segmented by psychological or sociological factors, whereas industrial customers are more likely to be concerned about industry characteristics (Ames and Hlavacek, 1984).

A customer looks for value with the technical and operating specifications of the product or service. Customers seek a mix of performance, packaging, quality, support, and price. Packaging means the physical, aesthetic, and emotional surroundings of the product and service. Quality can be divided into quality at delivery and quality in use over time. Support is becoming increasingly important and other parties than field services can deliver it (Riggs, 1983).

As regards pricing, price-insensitive market segments are particularly interesting. For a segment to become price-insensitive, buyers must be sensitive to performance, packaging, quality or support. Some examples of price-insensitive customers could be: a performance-sensitive buyer that buy a product that represent a small cost, but are critical at operations, a packaging-sensitive buyer who is not knowledgeable about the product, a quality-sensitive buyer buying a product for which field repair is difficult, or a support-sensitive buyer, who is unsophisticated and buys capital equipment requiring user training and preventive maintenance (Riggs, 1983).

2.6 Summary

In this chapter, first services as intangibles, which are linked to the production of a physical product, were summarised. Services increase customer satisfaction with a tangible product. The basic characteristics of services were identified to their intangibility, heterogeneity, perishability, and the inseparability of production from consumption.

Parasuraman (1985) highlights the five key gaps that can cause problems in service delivery. In service delivery, the most important factors for the buyer have been identifies as reliability, assurance, tangibles, empathy, and responsiveness. In the service environment, quality is a matter of subjective judgement, and is defined by the customer. Service quality is seen as a driver for perceived value. Heskett *et al.* (1990) claim that service quality relates closely with customer satisfaction. Total added value to the customer can be calculated as customer value. A customer buys what creates the most value for the customer.

Kotler (1997) defined customer satisfaction as feelings resulting from the comparison between perceived performance and expectations. Satisfaction can be divided into transaction-specific satisfaction and overall satisfaction. The concept of customer value suggests a strong relationship

with customer satisfaction, but Parasuraman *et al.* (1994) point out that causality with service quality and customer satisfaction is an unresolved issue. It was also identified that customer satisfaction is a complex issue that includes individual elements of customer satisfaction and dissatisfaction.

It would appear that customer needs and expectations are continuously changing and customers keep setting higher standards for suppliers. Customer satisfaction surveys are one source of customer feedback. When conducted frequently and consistently, they provide an effective way to measure customer satisfaction and customer loyalty. Danaher and Mattson (1998) found that attributes that make a customer satisfied are not the same as those that make a customer loyal. Previously it had been assumed that customer satisfaction would lead to success and profitability in the market place.

Griffin (1995) defines a loyal customer as one who regularly repeat purchases and has a degree of immunity to competitors. Customer satisfaction itself is not an indication of the customer's retention. Recent research (Heskett *et al.*, 1997) has proven that the link between customer satisfaction and customer loyalty is not reliable. Heskett *et al.* (1997) claim that there is a strong relationship among profitability, customer loyalty, customer satisfaction, and value of the goods and services delivered to customers. Oliva *et al.* (1992) propose that the relationship between satisfaction and loyalty is not necessarily linear; even customer satisfaction is identified as a key driver for loyalty. As maintaining existing customers is cheaper than getting new ones, the benefits of customer loyalty are cumulative and long-term.

The impact of customer satisfaction on customer loyalty varies from industry to industry (Jones and Sasser, 1995). Moreover, becoming a loyal customer takes place in stages. Investing in customer satisfaction pays off; the highest returns can be achieved by neutralising terrorists and subsequently by investment in apostles. In services, effective service recovery can provide a way to total satisfaction without perfect design and delivery of services. This is due to the nature of services, which makes it likely that mistakes will happen. Customer relationship management is required to build a lasting relationship with a customer. Customers with a personal relationship with the supplier's staff are likely to become loyal. Developing customer loyalty may require increasing amounts of contacts with the customer; after-sales provides a natural link between the supplier and the customer. Storbacka *et al.* (1994) highlight relationship strength and relationship longevity as important contributors to and instruments for explaining the chain from service quality to profitability of customer relationships.

This summary demonstrates that services have been increasingly thoroughly studied, and the studies have found more complex issues underneath the relationship between the customer and the supplier. These studies have sought to gain a more thorough understanding of the dilemma as to how services and their delivery are connected to the profitability of a company, and to find out the "true" nature of services. Anderson and Mittal (2000) have recognised that the links in the satisfaction-profit chain are asymmetric and non-linear. Companies can improve customer satisfaction by improving product and service attributes. Improved customer satisfaction is expected to lead to greater customer loyalty. Increased customer loyalty is expected to lead to greater profitability. Therefore, companies focus on the satisfaction-profit chain rather than maximising satisfaction scores alone.

3 HYPOTHESES

The goals of the study were to increase understanding of managing the care phase by clarifying the importance of the care phase for the customer. The study focuses purely on the care phase, rather than on the entire value chain, as is the case of Fornell (1992), Jones, and Sasser (1995) and Heskett *et al.*, (1997), who studied different aspects of the care services, the service manager concept, and the customer-supplier relationships in relation to customer satisfaction and customer loyalty. Customer satisfaction and customer loyalty are observed through service manager and care phase services in different life-cycle phases in terms of customer relationship or customers' experience as mobile operators. The practical motivation for the study was the question of how to organise operations in the care phase. The service manager concept was seen as a potential solution for improving customer satisfaction in the care phase. A service manager is responsible for providing care services to an individual customer. Service managers manage the care services, but as the profitability of the account is additionally heavily affected by other factors, the concept cannot purely be judged by the business results of the account, but certain other measures could provide an insight. As Kaplan and Norton (1996) propose, financial performance measurement does not alone provide a complete picture of the operations of a company. For the long-term success of a customer relationship, customer satisfaction and customer loyalty are considered vital (Heskett *et al.*, 1997). In the present study, customer satisfaction and loyalty have been particularly highlighted, as measures of the success of the care phase.

The role of the service manager was seen to be an active actor in the customer relationship. Furthermore, there was general interest in the study of the communication between supplier and customer. How is the customer-supplier relationship managed and how do the parties communicate? Who communicates with whom? In general it was thought that there are a number of factors that affect customer satisfaction and customer loyalty, as presented in Figure 7. In the present study, the scope of the study was limited to the study of the service manager and those services that are delivered to the customer for which the service manager is responsible. Therefore, the scope had to be widened to cover customer satisfaction, customer loyalty, and customer relationships.

Figure 7 proposes that the service manager and other supplier personnel in the care phase who communicate with the customer have an impact on customer relationships and on customer satisfaction. The service manager has a direct impact on customer satisfaction. Furthermore, how the service manager manages delivered services indirectly influences customer satisfaction and customer loyalty. For the customer, the delivered services are the most visible output from the supplier in the care phase and the customer's perception of the services determines his/her customer satisfaction.

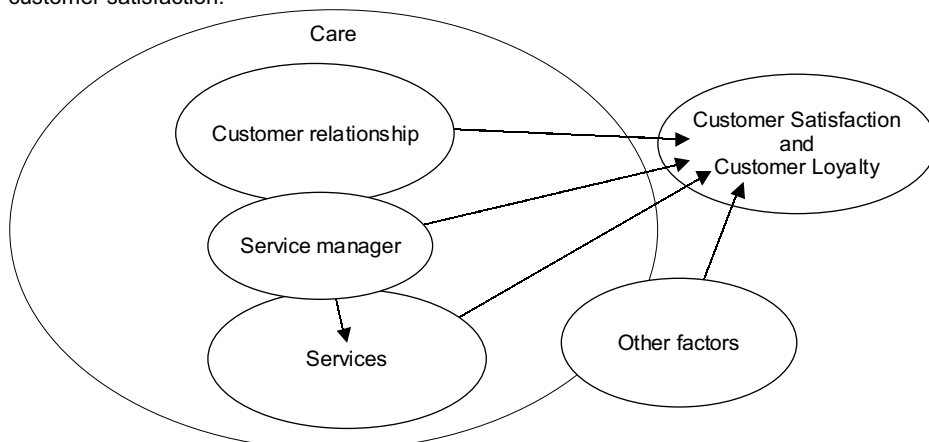


Figure 7. Connections of elements of care phase

Kotler (1997), Porter (1985), and Vavra (1994 and 1995) claim that after sales services and activities represent keys for customer satisfaction, customer loyalty, and competitive advantage. Until the 1980's, services generally had received little attention (Grönroos, 1980). There is only little literature that has discussed the areas of after market services. Even the literature that stresses the importance of after sales phase usually concentrates on how to initiate such phenomena as customer relationships management or other after marketing activities. After sales activities themselves have not been considered a great deal in previous studies. Glanz (1994), Naumann (1994), and Selnes (1997) found that communication increases both trust and satisfaction to the supplier. Shared understanding of performance outcomes and expectations can be achieved through communication. As the service manager concept aims to improve the customer's satisfaction in the care phase by increasing communication, it can be claimed that the concept would become an important issue for the customer. As the use of the mobile network increases over time, more of the customer's activities will relate to care issues.

According to Riggs (1983), aftermarket communication can be critical for customer satisfaction. Only if the customer can use the product effectively can the customer be satisfied and loyal. As network deliveries frequently take years, there is considerable interaction between the supplier and the customer. As the care phase is the revenue generator for the customer, its importance is hypothesised to increase as a function of time.

The service manager concept was established in the supplier company based on the feedback that suppliers received from customers. Customer feedback led suppliers to conclude that they were not paying enough attention to customers in the care phase. Consequently, one could expect that customer needs and requirements had, at least to certain extent, changed. Therefore, the care phase could be more important for the customer than suppliers had considered. In general, after sales phase is frequently mentioned as an arena for competitive edge (Porter, 1985, Kotler, 1997), but it has not received much attention in the research. Lele and Karmarkar (1983) and Lele (1983) claim that product and service support, which resemble care, is generally perceived as a business opportunity in companies. Companies frequently do not consider support as an important element of marketing strategy.

Hypothesis 1. The importance of the care phase to the customer increases over time.

According to Ayres (1988), from an organisational perspective, organisations tend to change in customer relations over time. In the early stages of the customer relationship, a flexible organisation is required, but in the later stages organisations seem to have a tendency to become more bureaucratic. Selnes (1995) has addressed the role of satisfaction and trust in maintaining and enhancing the relationship, as they can reduce the perceived risk. Relationship continuity does not require trust. According to Krackhardt and Hanson (1993), it can be assumed that informal networks become more established over time as persons learn to know people and with whom to deal in different situations. On the other hand, as people change the communication networks similarly change. According to Dijksterhuis *et al.* (1999), Lewin *et al.* (1999), and Van den Bosch *et al.* (1999), firms' strategic and organisational adaptations co-evolve with changes in the environment and therefore, as operations become more stable, the communication will similarly become more structured. Garbarino and Johnson (1999) point out that no previous studies have examined how customer satisfaction might vary among customers with strong or weak relational bonds to their suppliers.

Hypothesis 2. The structure of communication between supplier and customer becomes more established and standardised when co-operation develops.

As communication has been used to make easier for the customer, the service manager could become one of the crucial individuals for the customer and the supplier. According to Petrozzo and Stepper (1994), the customer will feel positive about communication that is made easy and quick. The supplier needs to communicate with the customer even after the purchase decisions are made (Griffin, 1995).

As the service manager concept was started and the study was in its initial stages, a generic assumption was made of the importance of the service manager. It takes time for the customer to bring their mobile network into use. Customers' interactions with the service manager increases

gradually, similarly increasing the importance of the service manager for the customer. The supplier considers the service manager concept a way to give customers an opportunity to influence the design or delivery of services, which, according to Wayland and Cole (1997), increases customer loyalty. The service manager's position as the responsible person for the care phase, in addition to his expertise of customer care, was considered to bring about a situation whereby all parties would very much need the expertise of the service manager. It appears that customer organisations will diversify to network operations and network design functions over time. Therefore, the supplier's service manager concept will be, based on the theory of co-evolution of organisation, a better adaptation to the customer organisation later on (Dijksterhuis *et al.*, 1999, Lewin *et al.*, 1999 and Van den Bosch *et al.*, 1999).

Hypothesis 3. The importance of the service manager increases over time as the customer relationship matures and the customer starts utilising the equipment purchased.

Hypothesis 4. The service manager is one of the supplier's central personnel for the customer in the care phase.

Wayland and Cole (1997) stress the importance of communication in a relationship. In high-tech environments, face-to-face contacts can be necessary. The more the supplier is engaged in two-way conversations, the greater is the potential for establishing a bond between the supplier and customer. Clemmet (1998) also addresses the issues of customer relationship management programmes. Top management in companies is frequently selected as the sole focus of the research for practical reasons, as in Dijksterhuis *et al.* (1999), although they realise that it may be useful to extend the analysis to lower level management.

A bond is most likely to develop between the customer and the central personnel of the supplier because of the extent of their communication. In general, it was assumed that the decision makers of the customer would have the best overall picture in the customer organisations of how satisfied the customer is with the provided services. Central personnel in the organisation have a greater effect on decision making in the organisation than do non-central personnel because of their organisational position. In order to get value for money, customers are likely to ensure that they communicate their perceptions of the services to the supplier. From the supplier, those persons that are in continuous discussions with the customer are thought to have the best overall view of the customer's perceptions. These central personnel are in a position to discover issues that are essential to the customer and are able to use that information in a productive manner. In particular, the supplier's service manager would be in such a position regarding the care phase services. Therefore, the service manager is thought to be in a position to receive feedback from the customer and filter it into a practical form.

Hypothesis 5. The supplier's central persons have a better understanding of the customer's business than the supplier on average. The supplier's central persons understand the customer's expectations and needs better when measured in terms of understanding customer satisfaction and loyalty.

Hypothesis 6. The service manager has a better view than the rest of the supplier personnel regarding the care phase and customer's satisfaction and loyalty to it.

Much has been written about customer needs, for example Ames and Hlavacek, 1984, Wellemin, 1984, Mathe and Shapiro, 1993, Friday and Cotts, 1995, Grant and Schlesinger, 1995, Griffin, 1995, Wellington, 1995, Heskett *et al.*, 1997, Peck, 1997, Stenberg, 1997, Burgeson, 1998, and Gitomer, 1998. Lester *et al.* (1998) suggest that, as product life cycles are short, the customer needs change continuously. Customer needs can be defined by marketing research, asking customers, and reading about customer concerns. In order to decide if the service can be provided at a profit, it is necessary to determine the value equation of the service. By working together with the customer, customer value can be increased.

The customer's needs and operating environment must be understood correctly. Customer behaviour relates to customer buying and referral activity. The factors affecting customer behaviour can be used for forecasting what the customer will do in the future (Peck, 1997). Danaher and Mattson (1998) discovered that attributes that make a customer satisfied are not the same as the ones that make a customer loyal. Davidow (1986) states that high-tech customers cannot be

satisfied endlessly without new products or services. Furthermore, it is commonly agreed that customers occasionally do not recognise their own needs (Riggs, 1983, Leonard and Rayport, 1997 and Maister, 1997). According to Finkelman and Goland (1990), in order to satisfy customers, companies need to develop a detailed understanding of their expectations. According to Rothschild (1984), knowing the needs of the customer makes it easier to anticipate the possible substituting products and services. The supplier needs to identify the key purchase criteria and attributes of the customer (Bowden, 1998). However, as customer needs and expectations change, customers set new and higher standards (Wellington, 1995).

Customer satisfaction means that the supplier must uncover customer's needs and meet them; products and services must be satisfactory and perceived performance must be appropriate (Ames and Hlavacek, 1984, Friday and Cotts, 1995, Griffin, 1995, Peck, 1997, Stenberg, 1997 and Gitomer, 1998). It appears that customer needs and expectations are continuously changing and customers continue to set higher standards for the suppliers.

Based on the existing literature, it was natural to hypothesise that customer's needs would change as a function of time. However, few issues remained opened based on the literature. In the care phase, customer behaviour was unknown. Moreover there was no knowledge of how customer needs would change over time. What made the situation even more interesting was the set-up as it enabled comparison between customer data and supplier data. However, as there was no preliminary information on this, no hypothesis was made; it was only decided to concentrate both on customer and supplier, and monitor very carefully what kind of findings the data might reveal. It was considered necessary to attempt to map which services customers' needs would change and how those changes could be identified. The changes in customer needs were intended to be documented both as changes in the importance of individual services and as changes in the individual customer satisfaction-loyalty curves of services over time by utilising the different positions of the cases in the life cycle curves. For the individual service, this would mean that each of the customers would go through the different customer satisfaction-loyalty curves, and to different customers the satisfaction-loyalty curves could be different at the same time.

Hypothesis 7. Customer behaviour and attitude towards supplier's services is dependent on the duration of time in terms of the customer relationship or the experiences of the use of the equipment. This duration is reflected in the different services. Customers have different perceived importance for the services depending on their stage on the life cycle curve as mobile operators or in terms of customer relationship.

Hypothesis 8. As customer needs change over time, the characteristics of the service change. This is reflected as a change in the customer satisfaction-customer loyalty curve according to the phase of the life cycle curve which describes the customer as the user of the equipment.

Regarding the customer-loyalty curves a number of studies have been made in different industries during recent years. Several hypotheses have been presented regarding the form of the curves, for example Oliva *et al.* (1992), Fornell (1992), Heskett *et al.* (1997), and Ruyter and Bloemer (1999). In the present study it was hypothesised that customer satisfaction and customer loyalty could be different for the same service depending on the customer's position on the life cycle curve.

Oliva *et al.* (1992) point out that a customer's behaviour lags behind satisfaction, which makes it increasingly complicated to model customer satisfaction-loyalty. However, it is frequently assumed that there is a positive correlation between customer satisfaction and buying behaviour (Griffin, 1995 and Zeithaml *et al.* 1996), and Gronholdt *et al.* (2000) discovered a significant relationship between customer satisfaction and loyalty. Customer satisfaction has been identified as a key driver for customer loyalty (Finkelman and Goland 1990). Danaher and Mattsson (1998) found that processes of higher complexity do not necessarily have the lowest customer satisfaction evaluation scores nor the highest variation. The impact of customer satisfaction on loyalty is not the same for all industries (Fornell, 1992). In several studies it has been concluded that customer satisfaction and customer do not vary directly (Heskett *et al.*, 1997).

Based on Fornell (1992), it was further hypothesised that services that the customer could purchase individually would have different customer satisfaction and loyalty characteristics. On the other hand, as the care phase has been an area of study that has received little attention, it may be interesting to

attempt to discover some preliminary information on the characteristics of care phase services provided in the mobile telecommunications industry. It was hypothesised that individual services could have different customer satisfaction-loyalty characteristics. Normally, satisfaction-loyalty studies concentration investigating customer loyalty within an entire industry or company, whereas in this case, an effort was made to find out whether individual services would truly differ from each other. Some of the services were considered to have characteristics of services that the customer would be likely to purchase, whereas with regard to other services, there were no expectations as to how the supplier and the customers would react.

Hypothesis 9. Different care services can have different customer satisfaction and customer loyalty curves, even if the customer would purchase those services from the same supplier at the same time, and they would be provided to the customer at the same time.

4 METHODS AND MATERIAL

This chapter presents the selected supplier company and the selected research method, which is a case study research. The research design is presented and thereafter how the customer companies were selected as case companies, how the interviewees were selected, and how the interviews were carried out. The central themes of the research, which are supplier-customer communication, the service manager concept, the impact of care for customer satisfaction and individual services, are described. The present study explains how communication networks were created, how the impact of the care was studied, and each of the studied services are briefly described. Finally, the customer compass is described and explained.

4.1 The Supplier Company and Case Companies

4.1.1 Description of the Supplier Company

The supplier is a large company with a global network of research and development, production, distribution, sales, and customer services in several countries. The supplier is a front-runner in terms of networks and related services for the operator customers. The supplier offers systems and infrastructure for both analogue and digital networks. These products are designed to meet the diverse needs of wireless, fixed, and convergent environments. The supplier is a leading turn-key network supplier that focuses on planning customers' networks and services to meet customers' long-term goals, deploying and integrating customers' networks and systems for early market entry, and managing and enhancing customers' systems for peak performance.

The operations have been managed locally by a country organisation that reports to its respective areas. Operations in the countries have been organised around account teams that have business responsibility for a certain customer. The core account team consists of an account manager, a project manager, and a service manager. The account team is supplemented with other necessary resources such as marketing, finance and control, and logistics persons. Account teams are supported by the administration of the local organisation and by the area organisation.

The role of the care services has traditionally been to support the existing operations. The care services have always been delivered together with the equipment sales. The care organisation has been organised around the service manager, who is responsible for the care services. The personnel involved in the care operations have mainly engineering backgrounds.

The supplier company, referred to as a supplier in the present study, was selected for the study because it offered a unique opportunity to make a comprehensive description of the care and its implementation in the emerging field of the mobile telecommunications industry. Moreover, the supplier company has been active in putting ideas of after market thinking into practice. Therefore, the case selection was based on advance knowledge about a company that has carried out the development of a new kind of after market approach.

In brief, the supplier provides an appropriate case study for the following reasons:

- Customer care, i.e., after market thinking, is new within the telecommunications industry. The novelty of after market thinking is based on the fact that there is a limited amount of earlier work. Based on the interviews with customers, information was not found about competitors that might have a similar concept to the supplier's service manager in use.
- The concept is profound and it has not been documented previously. The concept extends and enhances the ways by which telecommunications companies have seen their scope of activities in care phase.

- This concept has been successfully implemented and its benefits have been realised in practical business contexts. The supplier company has since put the service manager concept into practice company-wide and nowadays all the major customers have a service manager.

The concept of the service manager was developed gradually over years, allowing a perspective on changes and a longitudinal evaluation of the company, although the cases themselves were carried out in a relatively short period.

4.1.2 Description of the Cases

All the case companies were mobile operators operating their networks in competitive markets in the telecommunications industry. In each case, there were at least two established mobile operators in the market place. One of the case companies operated in an environment where there were five mobile operators. The competition between the operators was considered to range from competitive to very competitive. Altogether, five case companies were selected, of which four cases, Case Infant, Case Child, Case Youth, and Case Maturity, were extensive and one case, Case Birth, was more superficial. The case companies were selected among the same supplier's "major customers" and the supplier was a single supplier for each of the case companies. Each case company represents a typical customer for the part of the life cycle curve from which they were selected (Gomm et al., 2000). In all of cases, access to the interviewed customer personnel was considered a critical aspect for the case selection. The order of presentation follows the reverse chronological order in the network life cycle curve, as the cases are presented starting from Case Maturity and ending with Case Infant.

Figure 8 demonstrates that, when the individual cases were selected, the idea was to select cases so that they would represent different phases of the network life cycle curve. Figure 8 demonstrates the order of cases in relation to each other in the network life cycle curve. The network life cycle refers to Chapter 1.3 Product Life Cycle and to evolutionary theories. The cases were selected in order to have representative customer cases for the different phases of the life cycle curve. After a case had been initially selected, the service manager of the customer was contacted in order to discover whether it would be suitable for the service manager that his customer be studied. All service managers who were contacted agreed to participate in the study. At the same time, a preliminary timetable for the study was agreed.

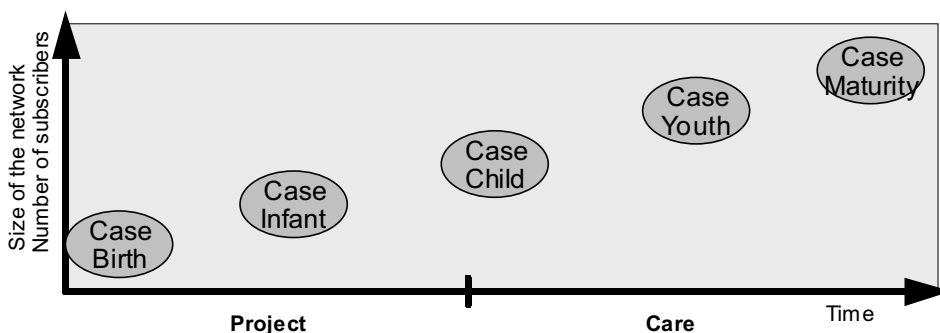


Figure 8. Selection of Cases.

Regarding the selection of interviewees, snowball sampling (Frank and Snijders, 1994) was used. The service managers told researchers with whom they were in more frequent interaction and who would be valuable persons to interview with regard to care phase issues. In addition, the service managers had a say who could be accessed for interview. Interviewed customer personnel represented high to high-middle management of the customer organisations. For the most part, those selected were people in charge of the operation and of the maintenance of the customer mobile network. In addition, persons in management positions were interviewed. The interviews were mostly conducted among engineering people.

The case companies varied quite significantly in size. The smallest case company had a few hundreds people employed at the time of the interviews, whereas the largest company had almost ten thousand employees. The number of potential interviewees in the customer organisations varied from approximately one hundred to approximately one thousand, if operative level personnel are taken into account. As the study focused on managerial level personnel dealing with the care issues, the number of potential interviewees is reduced. The number of potential interviewees reduced from approximately 50 to approximately 100 persons, depending on the case company. The interviewees were then selected based on the service managers' contacts, which limited access to all of those persons. In addition, all the possible people could not be interviewed as the time for the interviews was also limited.

Case Maturity was selected as a pilot case as it provided a good opportunity to access both the supplier's and customer's personnel. It was known that Case Maturity would additionally provide an opportunity to interview some of the persons again if new ideas were to evolve after the first in-depth interviews. Furthermore, Case Maturity was considered less sensitive to changes in the operating environment, as it was already at a more mature phase in the life cycle curve.

Case Child and Case Youth represented typical cases for the intended stages of the operators in their network life cycle curve. Case Child and Case Youth represented cases that had clearly entered into the care phase. Furthermore, these two cases were selected so that they would represent a slightly different kind of supplier's business environment to that of Case Maturity.

Case Infant was a typical case that was still in the project phase. In addition, Case Infant provided the opportunity to observe a case that would have a wider scope of care services delivered to the customer compared to suppliers' conventional business cases.

Case Birth was selected in order to find further evidence for the hypothesis of the perceived importance of the care phase. As the contract negotiations regarding delivery of a network to the customer were still in progress, access to the customer was not possible. Consequently, the comparison of services between supplier and customer was omitted from the scope of Case Birth.

Furthermore, two benchmarkings with two additional industries were carried out. The mobile telecommunications industry was benchmarked against the aircraft and health care industries.

4.1.3 Differentiation between Project Phase and Care Phase

In general terms, the cases could be divided into project and care phase cases, where the project phase represents customers without, or with only smaller number of, mobile users and a new network. In the care phase, customers have built or are building their networks, they have operated their networks for some time, they have significant customer base, and those networks can be considered well established. Another basis for differentiation is if the mobile network has been commercially operated by the customer. Normally, when a customer has taken the network into commercial use, the ownership of the network has transferred to the customer. Thereafter, decisions regarding the mobile network have been made by the customer. Therefore, this phase was considered to be part of the care phase.

The transition from the project to the care phase has been completed when there has been a customer acceptance for the equipment. (Service Manager, Case Youth)

With new technological changes, differentiation is not longer clear. Customers continuously modify, expand, and enhance their networks. New features are implemented into a network in commercial use to allow the use of more sophisticated services. Therefore, in all of the networks there are issues that relate both to project and care phases. If a customer is completely in charge of the project or care phase, the interfaces between the customer and the supplier must be formally defined and the differentiation between project and care becomes clearer. Even so, there are issues related to internal and customer acceptances that effectively guarantee the involvement of the project manager and the service manager in each other's areas of responsibilities. The present study concentrates on the care phase. If a supplier plays a significant role both in project and care

phase, those issues are agreed internally. One supplier claimed that the transition from project to care does not always take place smoothly within the supplier company. Holmlund (1997) and Holmlund and Strandvik (1999) found that interconnectedness of interactions made it purposeful to group interactions into entities on different hierarchical levels. The presented interactions can be classified into different aggregation levels, such as actions, episodes, sequences, and relationships.

The division between the end of project and the beginning of care is a clear point of discontinuity. If the transition from the project to care has failed it has always caused problems for the care phase. Service manager should be brought into the project to get acquainted to the customer and the issues in order to guarantee successful care phase. (Supplier, Case Maturity)

The duties of the project manager and the service manager are considered relatively clear by the supplier. Depending on the number of queries related to a project or care addressed to the "wrong" manager, a supplier could judge how well the customer has understood the supplier's service manager concept. In the interviews, it was pointed out that even the transition would be to some extent the supplier's responsibility; the customer wants to be involved in it as well.

Customer would like to be involved in the transition from the project phase to care phase. Customer is interested, as the customer would like to have better control over what has been transferred into the care phase from the project. (Customer, Case Youth)

4.2 Experience of the Researcher

In addition to the author's experience in the after sales environment and the development of the care concept in the supplier company during recent years, he has studied the body of knowledge in the area of the study. The literature review mainly covers after sales, particularly the management of after sales, service management, and customer satisfaction and customer loyalty related issues. Based on the review and on the author's previous experience, preliminary areas of interest were selected and an initial hypothesis was formulated.

The theoretical understanding of the research area was deepened during the research process. Both the research questions and questions for the interviews were further sharpened and focused as the focus of the study was defined more specifically based on the literature review and preliminary interviews. The researcher has approximately ten years experience in the telecommunications industry, mainly gathered in the field of services. He has been involved in the development of the care process developed earlier to respond to the customer requirements regarding after sales services. Subsequently, he was involved in the development of the managerial concept to solve the managerial challenges related to the managing of the care phase. He has been involved for almost five years in this field and more recently, he has been responsible for the competence development of service managers. Therefore, the used research method can additionally be considered action research.

4.3 Case Study Research

Yin (1994) proposes three conditions for selecting a research strategy that are in the form of research questions, relating to whether there is required control over behavioural events and if the focus is on contemporary events. In Table 6, the research strategies for different situations are presented.

Table 6. Relevant situations for different research strategies (Yin, 1994)

Strategy	Form of Research Question	Requires Control over Behavioural Events	Focuses on Contemporary Events?
Experiment	how, why	yes	yes
Survey	who, what, where, how many, how much	no	yes
Archival Analysis	who, what, where, how many, how much	no	yes/no
History	how, why	no	no
Case Study	how, why	no	yes

According to Eisenhardt (1989), the case study is "a research method which focuses on understanding the dynamics present within single settings". The case study is "particularly appropriate in new topics areas". Case studies can involve multiple cases with numerous levels of analysis and they can employ an embedded research design combining qualitative and quantitative data collection (Eisenhardt 1989; Yin 1994; Järvenpää and Kosonen, 1997). Yin (1994) states that the case study method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomena and the context are not clearly evident and in which sources of evidence are used.

Multiple sources of evidence and data collection methods strengthen the grounding of theory by means of the triangulation of evidence (Patton 1991, Yin 1994), and provide stronger substantiation of constructs and hypotheses.

The selection of the research strategy used in a study depends on the research problems and on the types of research questions stated. The case method has a distinct advantage when "how" and "why" questions are asked about contemporary phenomenon within a real-life context, and when the relevant behaviours cannot be manipulated by the researcher (Yin 1994). This was the situation in the present research. A case study research is appropriate in the early stages of research on a topic or to provide freshness of perspective to an already studied topic.

In the present study, attention was given to discovering "deeper" reasons behind phenomena. The interviews went into details and the interviewees were asked to justify their arguments in order to reveal underlying factors. As there was no possibility to have control over the behavioural events, experiment as a research strategy was excluded. Finally, describing a recent managerial concept and its consequences were focal for the study and history as a research strategy was similarly unsuitable. Therefore, the case study provided the best match in the selection of the research method.

Glaser and Strauss (1967), Strauss (1987) and Strauss (1998) argue that the close connection with empirical reality permits the development of a testable, relevant, and valid theory. By the term "qualitative research", Strauss (1998) means "any type of research that produces findings not arrived at by statistical procedures or other means of quantification". Some of the data may be quantified, but mainly the analysis is interpretative. Data are gathered by techniques normally associated with qualitative methods, but the data can be coded to be statistically analysed, i.e., to quantify qualitative data.

Qualitative methods permit an evaluator to study selected issues in depth and in detail (Patton 1991, Maxwell, 1996). According to Eisenhardt (1989), the final product of building theory from a case study can be a concept, a conceptual framework, a proposition or a mid-range theory.

The case study can be classified as descriptive in trying to broaden understanding through revelatory case evidence of the complex phenomenon in its natural context. Moreover, when attempting to obtain a holistic, real-life view, in order to improve our understanding of highly diversified and complicated operations, the focus can change during the research process. These represent precisely the setting in which the case study is superior to other methodologies, according

to Yin (1989). On the other hand, the chief criticism of the case study is based on that shift. Therefore, questions of validity and reliability of the study should be evaluated from this perspective (Niiniluoto, 1984).

4.4 Case Selection

Eisenhardt (1989), Yin (1994), and Glaser and Strauss (1967) emphasise that cases should be chosen for theoretical rather than statistical reasons. The aim of the case selection is to choose cases that are likely to replicate previous cases or extend the emergent theory, or they may be chosen to fill theoretical categories and provide examples of polar types.

Case studies apply well with studying specific, complex, functioning phenomena, but less for studying ongoing processes (Stake, 1995). Eisenhardt (1989) conclude that theories developed from case studies are likely to have such important strengths as novelty, testability, and empirical validity, and the case study is therefore particularly well suited to new research areas. In the present study, case study research is being used as it enables the tackling of a research topic that has hitherto not been extensively studied.

The role of cases in the present thesis is to enable observation of a recent business concept in after sales services in the high-technology market in order to provide a better understanding of its implications for customer satisfaction and loyalty. In this context, the ideas of Kasanen *et al.* (1993) about constructive research are applied. In particular, the weak market test is applied to demonstrate the feasibility of the managerial concept. The weak market test means here that a manager responsible for the financial results of his or her business unit willingly applies the developed construct in his or her own decision-making. The case companies demonstrate the relationships among customer care, customer relationships, care phase services, and care management in a particular high-technology company. The aim of the study is to increase understanding of the care services, the service manager concept, supplier-customer relationships, and how customer satisfaction and loyalty of services are interdependent.

4.5 Research Design

The research design is based on the approaches defined by Eisenhardt (1989), Olkkonen (1993), Yin (1994), and Järvenpää and Kosonen (1997), and is presented in Figure 9. The first step of the research was to conduct a literature review about services, service quality, customer satisfaction, and special attention was paid to customer loyalty in after market services.

This case study consists of a multiple case design, where each of the cases has been built on multiple data sources and data gathering methods. The evidence from multiple cases is frequently considered more convincing, and the overall study more robust. One drawback with the multiple-case study is that it can require extensive resources. The replication logic of multiple-case studies is analogous to multiple experiments. Each of the cases must be carefully selected to predict similar results (a literal replication) or to produce contrasting results for predictable reasons (a theoretical replication). It is important for the replication that a theoretical framework is developed and applied. The theoretical framework additionally becomes the vehicle for generalising to new cases. The number of cases depends upon the level of certainty required regarding the results of the multiple-case in a literal replication. In a theoretical replication, consideration is devoted to the sense of complexity of the realm of external validity (Yin, 1994)

The present study is based on a multiple-case analysis, since a single business area with several cases is analysed. According to Yin (1994), an embedded study involves multiple levels of analysis within a single study such as the levels of industry and firm. Embedded case studies involve more than one unit of analysis. Holistic design is suitable when no logical subunits can be identified, and when the underlying theory is itself of a holistic nature. In the present study three logical areas are identified that are treated as subunits: customer-supplier relationship, the care phase and its importance and impact on customer satisfaction, and individual services and their customer

satisfaction-loyalty characteristics. Therefore, the embedded case study design was a natural choice. The present study can mainly be categorised as "multiple-case, embedded" (multiple units of analysis).

The design of the case study can be changed and revised after the initial stages, but only with rigid controls. After pilot studies, i.e., after early data collection and analysis, a researcher can consider the initial design incorrect and modify the design – this can be appropriate and desirable. However, the researcher must be careful not to shift unknowingly the theoretical concern or objectives (Yin, 1994).

According to Yin (1994), an embedded design can additionally serve as a device for focusing a case study inquiry and helping to avoid slippages from the original research design. A major pitfall in the embedded design occurs when a case study focuses only on the subunit level and fails to return to the larger unit of analysis.

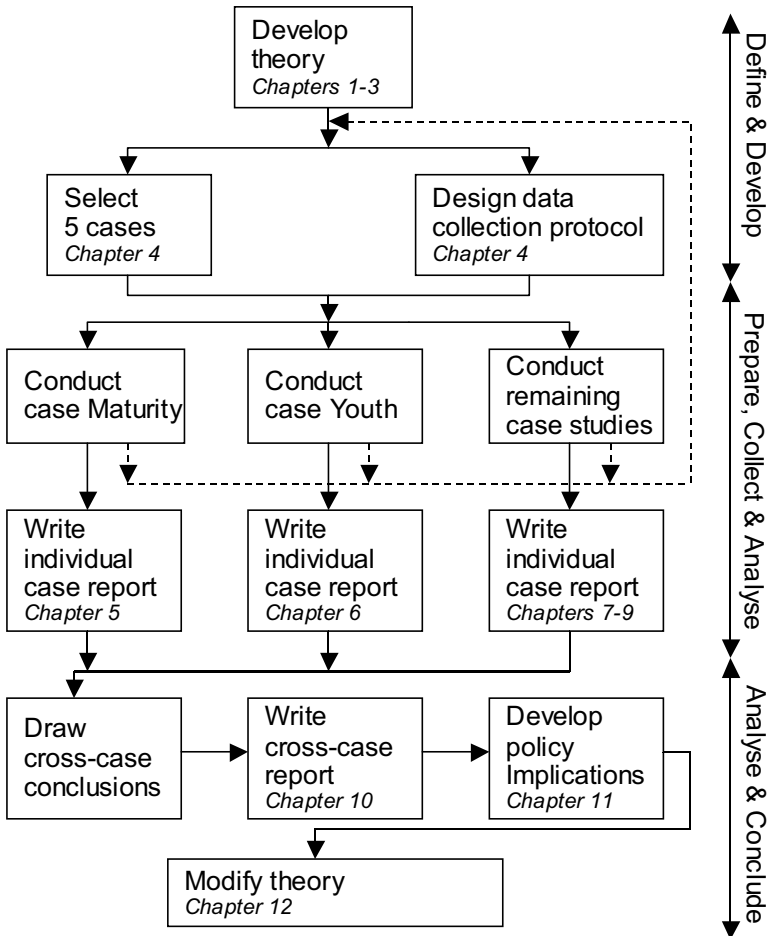


Figure 9. Phases of the case study

Based on the literature review (see Figure 9), the initial hypotheses were formulated. The initial hypotheses related to the importance of the care phase and individual care services, supplier-customer relationships, particularly on the central persons, and on the customer satisfaction-loyalty of care services. Based on the literature review and on the initial hypothesis, a preliminary study was conducted to gain more background information about services and care phase in general. Based on the preliminary findings, the data collection protocol was modified. After the preliminary study,

three cases were selected. Subsequently, initial interviews in Case Maturity were conducted. During the second case study, Case Child, the topics of the interviews and the data collection method were finalised. Therefore, certain data collected in Case Maturity had to be complemented and four interviews were conducted again. In addition, for a couple of persons in Case Maturity and Case Child, certain data were supplemented by phone interviews.

After the first cases, Maturity, Child and Youth, had been carried out, the need for two more cases was perceived. These two cases, Infant and Birth, would need to represent cases in the earlier phase of the life cycle curve in terms of customer relationship or experience as mobile operators. In each of cases Maturity, Child, Youth, Infant and Birth, a case report was written and sent for comments to all interviewees. Service managers were asked on three occasions to give their feedback on the findings, directly after the interviews, before the case reports were sent for the interviewees for their comments and when the case reports were sent for everybody to comment; on each occasion, received comments were taken into account in the case reports. Based on the individual case reports, conclusions in the cross-case section of the present study were drawn. Findings of case studies were compared in the cross-case analysis and implications for current theory and practice were identified.

According to Tashakkori and Teddlie (1998), "mixed model studies", i.e., studies that combine quantitative and qualitative approaches have become more common during recent years. The concept of "triangulation of methods" is established among alternative research methodological approaches. In the present study, triangulation was used to enhance the validity of research results, including data triangulation (the use of variety of data sources in the study) and methodological triangulation (the use of multiple methods to study a research problem). Thus, data were collected using qualitative and quantitative methods (Denzin, 1989, Easterby-Smith *et al.*, 1991, Tashakkori and Teddlie, 1998). Jick (1979) refers to 'within method triangulation' (such as multiple quantitative or multiple qualitative approaches) and 'across methods triangulation' (involving both quantitative and qualitative approaches). Both approaches were applied in the present study. Triangulation was carried out to crosscheck the study for internal consistency. In addition, as triangulation enhances the reliability and validity of research design, it can also enrich understanding by allowing new or deeper dimensions to emerge. Issues related to reliability and validity of the research are discussed in detail in Chapter 12.4 Evaluation of the Research.

In the present study action research has been utilised to certain extent. Action research brings together scholarship and praxis. The term "action research" refers to the entire family of approaches that are participative, grounded in experience, and action-oriented. Knowledge can be generated from the researcher's living and learning, and it is never static or complete. In clinical inquiry, the essential challenge for a researcher is to embrace concurrently the twin roles of researcher and process consultant. In the present study, the experience of the researcher in particular has been utilised to engage interaction between researcher and researched, and to interpret findings from the interviews. (Levin, 1999, Stringer, 1999, McDonagh and Coghlan, 2001, Reason and Bradbury, 2001, McNiff and Whitehead, 2002)

4.6 Data Collection

Yin (1994) presents three principles of data collection for case studies that have been followed in the present study: using multiple sources of evidence, creating a case study database, and maintaining a chain of evidence.

In the present study, the case study database contains the collected data and information on the collected data, how and when it was recorded or collected. According to Miles and Huberman (1994), a feature of qualitative data is its richness and holism, with strong potential for revealing complexity. While quantitative studies produce statistical generalisations based on data, a qualitative analysis provides theoretical generalisations (Yin 1994).

In the present study, several data collection methods were used. The main means of data collection methods were documents, archives, interviews, and direct observations (see Appendix 1). The internal material of the company was used extensively. The documents and archives included such issues as after market strategy and information on care services and customer satisfaction in

various services. Generic global customer satisfaction reports and user-group forum reports were also utilised. This information was mainly used as background information for the interviews. However, because of concerns about confidentiality of such information as profitability of the account or the value of contracts, much of the information is reported in more generic terms.

4.6.1 Selection of Interviewees

Before the interviews took place, discussions were conducted with the service manager regarding the most appropriate persons for interview, i.e., the method used for data gathering was snowball sampling (Krackhardt and Hanson, 1993, Frank and Snijders, 1994). The most suitable persons were thought to be those persons who were actively involved with the account in general and with care phase in particular. The names of the persons were listed and they were then contacted by the service manager or by the interviewer, and the time for the interview was fixed. It was already at that stage decided to limit the snowball sampling to the service managers in order to limit the number of interviews.

The process of selecting the interviewees was maintained constant. It was agreed that from the supplier's own organisation the service, account, and project managers would be interviewed as the core account team. In addition, the service manager was asked to name those persons that he is normally in contact with both in the customer and in the supplier organisations. Based on the service manager's nominations, the interviews were then agreed with individuals.

The interviewees were represented an appropriate mix of people in different positions in the care phase activities. They represented both the supplier and customer organisations and provided various levels of expertise and organisational hierarchies. As the contacts with the customer company were largely dependent on those people whom the service manager knew, the choice of interviewees in the customer company was more limited than in the supplier company. In addition, the number of interviewees had to be limited because of their availability for the interviews.

In the case of the supplier, there was more flexibility for the selection of the interviewees. The interviewees in the supplier organisation were selected based on the interviews that had already been carried out in order to provide different perspectives. Consequently, a number of extra persons could be interviewed, if it was considered necessary. An interview typically took approximately an hour and a half to two hours per person. In certain cases, particularly in Case Birth, the duration was limited because urgent meetings were called or emergency situations arose that the interviewee was forced to participate in. Table 7 shows in detail the numbers of interviewees in different cases.

Table 7. The number of interviewees in the cases

Number of interviewees	Maturity	Child	Youth	Infant	Birth
No. of supplier persons	13	9	8	13	3
No. of customer persons	8	4	5	4	0

In Case Birth, no customer personnel could be interviewed because of the sensitive stage of the contract negotiations between the supplier and customer. Furthermore, two benchmarking in other industries were carried out. One was carried out in the aircraft industry in order to discover how different industries deal with similar issues in their customer care. Interviews were carried out with both the aircraft manufacturer and its customer. Finally, the health care industry was studied based on the existing literature, in order to discover how customer care was organised in the other industries. The health care industry study was retained as a literature review as the nature of the business was considered quite different from that of the mobile telecommunications industry.

4.6.2 Interviews

Data were collected using both structured, pre-formulated interviews and thematic, open-ended interviews. Most interviews were recorded (tape or digital). The researcher carried out all the

interviews, which provided insight when completing cross-case analysis. The structure and questions posed to the interviewees can be seen in Appendix 2.

In cases Maturity and Child, the questions posed to the interviewees were re-formulated to better reflect the scope of the research. The structure and questions of the interviews were similar throughout all cases. The interviewees were asked questions on: services the supplier provided to a specific customer, on the interviewee's contacts in the customer and supplier organisations in the care phase, the role of the service manager, and the relationship of the supplier and the customer. The researcher's role in the interviews was to ensure that the necessary topics were covered. The interviewer asked additional questions, if necessary, to highlight or clarify issues.

If something interesting or unexpected arose in the interviews, the interviewee was asked to justify his arguments and, if interviewee's answers were contradictory, the interviewee was asked to clarify the issue. The researcher made notes on his perception and interpretations of the interviewee's answers.

4.7 Data

Eisenhardt (1989) claims that the case study may include both qualitative and quantitative data and that the use of both can be highly synergistic. The present study makes use of both qualitative and quantitative data.

4.7.1 Analysis of Customer Contacts and Relationships

Interviewees were asked about their contacts in order to identify the key contact points in both the customer and supplier organisations (Krackhardt and Hanson, 1993). The interviewees were firstly allowed to name persons, and then they were shown diagrams of the customer and supplier organisations to help them with the nominations. Finally, the interviewees were asked if they still had some contacts that they had not nominated and were asked to nominate those persons. When people were asked about their contacts, they were also asked about the frequency of communication. The options were daily, weekly, bi-weekly, monthly, or quarterly. In the study, only the frequencies of monthly or more frequently were counted as contacts with the person. If communication was more occasional, it was considered special and of lesser value when it comes to the identification of central persons.

Stories frequently differed between two interviewees regarding the frequency of their communication with each other. In certain cases, the other party may not even have recognised or remembered that he or she was communicating with the other person. It was considered sufficient, if only one party recognised that he or she was in contact with the other party, but the other party did not; this is referred to here as unidirectional relation. In this way, persons who were not interviewed could be identified as central persons and interviewees were not excluded as central persons too hastily.

Therefore, the selection of central persons was initially based on the number of contacts that the other interviewees claimed to have with a particular person. Thus, persons who were interviewed could not influence how he or she was recognised as a central person. It was only other interviewees' answers that would help to recognise a person as a customer's or supplier's central persons. When the communication networks are observed, information given by the person himself or herself with whom he or she claimed he or she was communicating was included, including whether that communication between the two persons was two-way communication.

In order to identify the central persons for the customer-supplier relationship in the cases, tables for the selection of the central persons were created. The tables clarified the number of nominations that a person had received from the supplier and customer interviewees and included a column for the relative degree of contacts. The relative degree of contacts was included to enable a comparison of the relative degree of number of contacts between different cases (Scott, 1991).

The relative degree of contact is calculated from the number of nominations divided by the total number of possible nominations for the person to be contacted by both the supplier and customer persons. In order to bring more objectivity to the selection of the central persons, the interviewee's own judgement was ignored, when the person was asked whether he or she was a central person. The central persons were selected based on the nominations given by the other interviewees, who had been selected based on snowball sampling.

Table 8 shows whether personnel are categorised as central or non-central persons. If the other interviewees have nominated the person as a party of communication at least in 50 percentage of the interviews, both by the customer and supplier interviews, the person was considered a central person. In the case of the customer, there one exception was made compared to the calculation of the supplier central persons. Those supplier persons who were in management positions not directly involved with the customer were excluded from the customer contact calculations, as they would give a wrong indication of the activity of the customer's contacts. In the present study, these persons were identified as supplier persons who reported no contacts with the customer. The customers' relative degree of contacts quite naturally remains below the supplier's values as a larger number of supplier's persons were interviewed, the contacts inside the interviewee's own organisation are more common, and the interviewees were selected by the service manager.

Table 8. Classification of interviewees based on their contacts

Relative Degree of Contacts	Activity of the Person's Interaction	Judgement
Under 50%	Low	Not a central person
50% – 70%	Medium	A central person
Over 70%	High	A central person

In addition, director or chief officer level personnel in the customer organisations were selected as central persons. Those persons have organisational power to decide on financial issues independently of the number of contacts with the supplier or customer organisations. The central persons are considered an important subject as, according to Krackhardt and Hanson (1993), the real work is done within companies in their informal organisations.

In Table 9, Table 10, Table 19, Table 20, Table 14, Table 15, Table 24, and Table 25, the central persons are selected. Those tables are presented in the case descriptions and also include the percentage number of the first person to be omitted as a central person. This person is referred to as a "first non-central person". In certain circumstances, rather than a person's name, the interviewees have identified rather a function in the organisation such as "finance and control" that could be interpreted to mean one or several persons. If there was no need to attempt to identify the person precisely, the organisational name has been used in the table as "party not selected".

Within cases, there were several persons who were not asked about their relations with the supplier and customer. The reason for not asking these questions of the customer persons was the tight schedules of interviewees, as in two interviews the interview schedule was changed at the last minute, so not all questions could be asked.

The central persons were selected based on the data gathered in the interviews. The method used for selecting central persons was to identify those persons who were non-central persons and to omit them. It was decided to use the graph theoretical approach to reporting about relationships. According to Johanson, Mattila, and Uusikylä (1995), graph theory has certain drawbacks, one of which is its limited capabilities in cases of "valued" matrixes, as it is difficult to use for graphical presentations. Sociometric presentations would allow a more flexible approach. Scott (1991) has shown how such drawbacks can be overcome. The aim was to keep the graphical presentation as simple as possible because of the variety of interviewees' responses in relation to their frequency of contacts with different people, as the frequencies differed very much from person to person. Because the present study was mainly interested in the service manager, the approach was selected so that overly complex presentations would be avoided (Scott, 1991, Johanson *et al.*, 1995).

Three different kinds of communication networks were designed: networks on the supplier's internal communication, customer's internal communication, and communication between the supplier and customer. In the schemes, the frequency of communication has not been differentiated and all contacts that took place at least on a monthly basis were taken into account. In the schemes, the arrowhead points in the direction to which the person has reported to be in contact. A line with two arrowheads indicates reciprocal contacts. Directed graphs were used in figures Figure 10, Figure 11, Figure 29, Figure 30, Figure 17 to Figure 19, Figure 37 to Figure 39, and Figure 69 to Figure 75. The arrowhead indicates the direction of the relation. The relation starts from the person who has the relation and ends at the arrow head, with the person with whom the interviewee says he or she is in relation with. The frequency of communication provides detailed information on how frequently the counterparts communicate with each other. It was noted that the frequency of contacts was not that critical, but that the contacts themselves were essential.

4.7.2 Impact of the Care on Customer Satisfaction

Regarding the importance of the care phase on customer satisfaction, the interviewees were asked about the relative share of the care phase sales to the particular customer. First, it was clarified with the interviewees what proportion the care sales represented of the supplier's total sales to the customer. The interviewee was then asked to judge whether the importance of the care phase for total customer satisfaction would be more, less, or the same as its relative portion of the care phase sales of the total sales to the customer. It must be remembered that most of those who judged the relative importance of the care phase to the total customer satisfaction work mainly with care phase related issues.

A number of interviewees additionally made comments about how much they thought the care phase represented of the total customer satisfaction, even they had not been asked to do so. This gives a clear indication of the importance of care for the individual customer, but as the share of the care sales varies from customer to customer, it is not a comparable figure between different cases.

4.7.3 Delivered Services

Service A consists of tasks that can be divided mainly into three categories: local support for customer enquiries related to equipment or services, the correction of possible software faults in the system, and delivering new or enhanced features to the customer's mobile network with new software. The software in question in service A is mainly related to the software produced by the supplier for its own equipment. There is no other manufacturer for the software for this equipment. Service A can be classified as having elements of maintenance, preventive maintenance, and additionally enhancing the capabilities of the mobile network.

Service B represents a repair activity of the pieces of equipment delivered by the supplier. The supplier's responsibility is to repair equipment and deliver functioning pieces of equipment back to the customer. The supplier's and customer's responsibilities regarding the procedures and logistics arrangement can vary. The service has slightly different service levels and service definitions, varying from case to case. In advance, the customer agrees with the supplier about the characteristics of the service and service levels. The customer sends pieces of equipment for repair as they fail. The supplier is, in most of the cases, the only manufacturer capable of repairing the pieces of equipment. The nature of service B is purely maintenance related.

Service C is used for dealing with emergencies that can appear in the mobile network. The customer has direct access to the supplier's experts, who can give advice over the phone, solve the problem by themselves remotely or on site depending on what the customer needs and requests. The customer purchases the service to cover a certain period of time. Service C provides maintenance service to the customer.

Service D is related to training the customer how to utilise supplier's pieces of equipment. The training can be divided into theoretical and practical training. The supplier provides different levels of

training depending on the customer's needs and its personnel's level of competence. The service can be purchased either as packages or the customer can opt to purchase individual modules. In addition, the supplier's competitors provide training for the same technologies, but not for exactly the same pieces of equipment. Depending on the individual components of service D, it can be classified as either preventive maintenance or as enhancing the capabilities of the customer and its mobile network.

Service E deals with the mobile network parameters. Service E is normally activated already in the early stages of the mobile network building and it continues from there to the end of the network life cycle. In service E, the supplier can design the network and plan its parameters for the network. The service can also be used to consult how such activities should or could be done as well as attempt to optimise an existing network. In the market place, there are several providers who can deliver the service. One of the customer's options is self-provisioning of the service. The scope of service E can vary, and it is very much to be tailored to the individual customer's needs locally. The nature of service E is mainly to enhance the capability of the customer's network, but occasionally service E can have the characteristics of both traditional and preventive maintenance.

Service F is utilised by the customer's for various tasks. Mainly the service is used to perform a variety of customer specific tasks that are identified in the negotiations. The service can be used to increase the customer's manpower temporarily or to access skills that the customer does not possess. Frequently, the service is combined to give support to the customer and on-the-job training with the network. The customer can try to self-provision or to purchase the service from the contractors from the market place. It can be characterised as a combination of maintenance and preventive maintenance.

Service F₂ is utilised in the maintenance and preventive maintenance of the mobile network. It is in many ways similar to service F. The primary difference between the services is that this service can be considered to have a wider responsibility and the customer specifies it more accurately beforehand. Service F₂ does not normally involve the training characteristics of service F and it is considered to be manpower intense. In service F₂, the supplier concentrates its efforts on the maintenance of the mobile network.

Service G is used to identify processes or other entities that could be improved. The supplier's approach within the service is consultant like. The service is used to confirm whether the customer is performing certain tasks as they have been predefined and described. Service G can be characterised as a service that aims at enhancing the capabilities of a network, but also identifies issues that can be utilised in preventive maintenance.

Service H can be viewed as a similar service to service A. In service H, the performed duties are primarily the same as in service A. The difference for the supplier is that another equipment manufacturer manufactures the equipment with which these tasks are carried out. Service H has characteristics of maintenance, preventive maintenance, and enhancing the capabilities of the network.

The purpose of **service I** is to monitor what is going on in the customer's network. Service I is used to identify potential problems and initiate actions based on the feedback received from monitoring. Service I is performed together with the customer's personnel. It includes mainly elements of maintenance, but also certain characteristics of preventive maintenance.

In **service J**, the supplier provides the customer with information regarding the performance and the configuration of the network. The performance and the configuration are optimised by the actions of the supplier. Service J can be utilised in the preventive maintenance and in maintenance.

The scope of **service K** can vary considerably depending on the extent of the contract between the supplier and customer. In service K, the supplier takes on a number of duties from the customer in order to have a degree of responsibility over the technical operations of the customer network. Service K has the potential to provide maintenance and preventive maintenance, and to enhance the capabilities of the customer.

The service manager is a person nominated by the supplier to be responsible for the management of care phase in the supplier organisation. The service manager is responsible for the care phase of a customer account. The supplier considers the service manager a service for the customer, even if it is not necessarily itemised as a service.

4.7.4 Scoring Individual Services

When individual services were under investigation and customer satisfaction and loyalty relating to them were studied, the interviewees were informed about the services that were delivered to the customer. Firstly, the interviewees were asked to describe if there had been any particular phenomena related to the service in question. If the interviewee was not sure about the contents of the service, he/she was briefed about the contents of the service. After each service had been discussed, the interviewees were asked to score each of the services for customer satisfaction and for loyalty. The interviewees marked their verbally stated scores on a satisfaction-loyalty matrix.

Customer satisfaction refers to customer satisfaction levels, which range from 0 to 10. 0 is extreme customer dissatisfaction, 10 extreme customer satisfaction, and 5 is neutral. The scale from 0 to 10 was scaled to the nearest integers or halves. If the interviewee could not decide between two numbers, a compromise was arrived at, to award in that case half points. The same was applied to the loyalty axis. Loyalty was clarified for the interviewees to mean loyalty in terms of the customer's repurchase intentions and the scale was clarified for the interviewees. The scale from 0 to 10 illustrates probabilities from 0 per cent to 100 per cent as to the likelihood of repurchasing. These two values, satisfaction and loyalty, were inserted into a single matrix to give a graphical illustration. In the graphical presentations all the data has been included.

In this research, the intent to repurchase was the most valuable source of information, as the customers were a supplier's existing customers. According to Jones and Sasser (1995), there could be a degree of exaggeration related to the questions of repurchase intentions. They propose primary behaviour, which relates to purchasing history, and secondary behaviour, which refers to customer referrals, as alternative data sources. In the available cases, primary behaviour would have given a more simplified picture of the situation, as all the customers had purchased their existing service for some time already and secondary behaviour, i.e., customer referrals could not be confirmed.

4.7.5 Analysis of Customer Satisfaction and Customer Loyalty

The analysis of each individual service was started by plotting all the individual scores to the same satisfaction-loyalty matrix. The data samples were so small in all the customer cases that the statistical significance of such calculations can be doubted. Instead, based on the qualitative and quantitative data that the interviewees provided, the method used provides a meaningful way of evaluating the services. The results give a rather accurate estimate of the relationship between customer satisfaction and loyalty in different services, as in the present study there was an effort to perform both a quantitative and qualitative analysis. If both the quantitative and qualitative analysis yield similar results, the phenomena can be assumed to be valid, although the extent of such phenomena may not be exactly known.

It is recognised that the scale used is an ordinal scale. As Valkonen (1971) suggests, that even when researchers are aware of the faults in their procedures, they use distance scale procedures with ordinal scale metrics and knowingly break the rule. In the present study, an interval scale was used, no statistical analysis was carried out, and the statistical significance of the data sample was not tested. However, means and standard deviations were calculated for the supplier and the customers. For both of groups, averages for the entire sample and for the central persons were calculated. The entire sample additionally includes the scores provided by the central persons (Karma, 1980, Karma and Komulainen, 1984, Järvenpää and Kosonen, 1997).

4.7.6 Most Important Services

Interviewees were asked to name the two most important services for the customer from those offered by the supplier. The customer generally had purchased these services or there had been a degree of negotiation regarding the services. Entirely new services for the customer were only discussed if the interviewee mentioned another service. This was done in order to find out the relative importance of the services and to find out if the importance of the services could be interpreted in the same way by the customer and by the supplier. It was considered an interesting exercise to discover if the relative importance of the services would be the same from case company to case company. The two most important services were evaluated after the individual services had been discussed and evaluated in terms of customer satisfaction and loyalty. Barsky (1995) suggests, regarding priority marketing, that companies rarely divide up their products and services and ask what is important in them, although this approach can yield valuable insight. In the present study, care phase was split into services and their importance was studied rather than the entire care phase, as is frequently done.

The number of most important services was limited to two, as the number of services was somewhat limited in most cases, and the intention was to find those services that the customer particularly focussed on. Not all of the customers used all of the services. The interviewees were not asked to rank the services, even though many interviews did so. Therefore, from the present study's point of view, only a service belonging to the two most important groups of services was valuable enough, as the idea was to identify those truly important services.

The interviewees were frequently incapable of deciding, or at least were hesitant to decide, among a number of services. Interviewees could express their own preferences and nominate more than two services when it was necessary. By this arrangement, it was hoped to ensure that those services that, according to the interviewee, were the most important services were also identified as such services. Tables in the cases that present the most important services provide the information in relative form in percent units. In each case, the sum of all the services should theoretically be 200 per cent, but as some interviewees nominated more than two services, the sum of percentages could exceed 200 per cent. For an individual service, the maximum was 100 per cent, which was achieved when all the interviewees mentioned the service as one of the most important services. All the services that were listed among the services available for the customer are listed in the summary tables.

4.7.7 Customer Compass: Means to Evaluate Customer Relationship

Customer relationships can be divided into several dimensions. According to Wayland and Cole (1997), customer portfolio management handles the selection and management of customer relationships. Companies can increase their value for their customers by choosing optimal positions to suit their markets. With customer compass, one can gain an overview of the position of the customer-supplier relationship. The interviewees were asked to rate their customer-supplier relationship according to the framework of Wayland and Cole (1997). The relationship value was divided into customer portfolio management, value proposition design, value-added role, and reward and risk sharing, as presented in Chapter 2.4.6 Dimensions of Customer Relationships. Customer portfolio management handles the selection and management of customer relationships. Value proposition design is concerned with a company's contribution to its customers' value chain. Value added role refers to a company's position within the industry's value added chain. Reward and risk sharing is tied to the basis on which customers and suppliers interact to create and share value (Wayland and Cole, 1997).

Interviewees were given three options in customer portfolio management: individual, group, or market. Subsequently, the qualitative answers were translated into numeric ones in the following manner: individuals were marked as "5", groups as "3" and market as "1". If the answer was between individual and group, a "4" was awarded and if the answer was between group and market, a "2" was awarded. This was done in order to categorise the answers in an effort to find out how different individuals would position the relationship in the different areas of customer relationship and to be able to draw comparisons between suppliers', customers' and service manager's' opinions.

Suppliers' values have been calculated as an average of the answers given by the individuals who graded the dimensions of the relationships. These values include service managers' grading. Customers' values were calculated in same way. The total number of respondents was 36 supplier persons and 19 customer persons.

Value proposition design was divided in a similar manner into three different options: core product, extended offer, and total solution. The interviewees could choose between those options and then there were two more categories for the answers that belonged between the three options. The three options available were then coded in the following manner: core product was marked as "1", extended offer as "3" and total solution as "5". Answers falling between the options were assigned/awarded "2" and "4", respectively.

The value-added role was similarly divided into three options: product manager, process manager, and network managers. These were then coded in the following way: product manager was marked as "1", process manager as "3" and network managers as "5". As with the other options, "2" and "4" were awarded if an interviewee's reply could not be categorised into the "main" categories, but fell between the two main options. Risk and reward sharing were divided into neutral or market based risk and reward sharing, performance-based sharing, and outcome-based sharing. These categories were coded afterwards in numerical form in the following way: neutral or market based risk and reward sharing was marked as "1", performance-based as "3" and to outcome-based sharing as "5". Answers falling between the options were awarded "2" and "4", respectively.

5 CASE MATURITY

5.1 Introduction

Chapters from 5 to 9 follow an identical structure. Chapter 5 presents Case Maturity. In chapters 6, 7, 8, and 9 cases Child, Youth, Infant and Birth are presented in alphabetical order. The customer case company is introduced and data from the interviews is presented. The customer-supplier relationship is described in terms of the contacts that different parties have reported within the supplier company and the customer company, and between the supplier and the customer company. This is followed by a description of the connections between the care phase and customer satisfaction. The customer's and supplier's evaluations of services within the supplier organisation and between supplier organisation and customer organisation are presented. Finally, the service manager concept is analysed and findings relating to customer compass are presented. At the end of each chapter, a brief summary of the findings is presented.

5.2 Background and Position of Company Maturity in the Market Area

Customer company Maturity and the supplier company have had a long business relationship with each other over a decade. The current mobile network has been in use for over five years. The supplier is currently the sole supplier of the core mobile network of customer Maturity. Previously, there were other suppliers, but in recent years the supplier has become the sole supplier. In addition to customer Maturity, the supplier additionally provides equipment to other customers in the market area, but customer Maturity is considered the most important of these customers from the supplier's point of view. Currently, customer Maturity focuses on the operation of the network. Perhaps the heaviest expansion of the network has been completed. The growth rate of the number of subscribers is slowing, but revenue continues to grow rapidly. The customer focuses on expanding capacity in "hot spots", i.e., locations that have capacity limitations, and maintaining or improving the quality of the network. In the near future, data solutions will similarly be gaining ground.

As customer Maturity is mature, established operator, the growth rate of the subscribers is already slowing. Still the subscriber invoices are growing steadily. (Customer Maturity)

Eight customer persons and 13 supplier persons were interviewed. Two of the supplier persons did not provide quantitative data. All those interviewed were of the same nationality. The number of services studied was six. The interviews were carried out between May and November 1999.

5.3 Customer Contacts and Relationships

All the interviewees in the customer company ($n = 8$) and most interviewees in the supplier company ($n = 7$) reported their contacts within their own organisation and with the supplier. In the supplier organisation, for various reasons, four persons did not report or were not asked about their contacts. Persons were not asked about their contacts if the interview could not be conducted within the time reserved for the interview. In the interviews, the number of persons identified as a party for communication by the interviewees was 43 persons; 22 supplier persons were identified, and 21 customer persons were identified as the other party of communication.

5.3.1 Contacts within the Supplier Company

It was recognised that four persons had considerably more contacts than anybody else had. These people were defined as central persons. Table 9 represents the number of contacts other interviewees reported having with them. In addition, Table 9 shows as a percentage the number of contacts the first person to be omitted as a non-central person and the first not selected party had. For a complete explanation of the abbreviations of the central persons see Appendix 3.

Table 9. Selection of supplier's central persons¹

Persons with whom interviewees have reported contacts	MA1	MS	MA2	MP	Party not selected ²	First non-central person
No. of supplier contacts	6	6	3	5		
No. of customer contacts	7	5	7	4		
Contacts/Max. Contacts	13/15	11/14	10/14	9/14	7/15	4/14
Relative Degree of Contacts	87%	79%	71%	64%	47%	29%
Activity of Interaction	High	High	High	Med.	Low	Low

(MA1 = Account Manager, MA2 = Account Manager; MP = Project Manager; MS = Service Manager)

From Table 9, one can recognise the central persons for the care phase as the service manager, account managers, and project manager. They were mentioned as a counterpart more frequently than other employees. The supplier's central persons interacted with each other very frequently. In this sense, no differences were found between these four persons. In customer contacts, these particular four people are clearly dominant (Table 9); only the project manager (MP) is judged as medium in his activity in the care phase. Other persons were awarded only a few contacts and those are interpreted as more infrequent contacts with the individuals in the customer organisations. All the central persons reported communicating with each other, which can be seen in Figure 69 in the Appendix 4.

5.3.2 Contacts within Customer Company Maturity

In the customer organisation, the selection of the central persons and non-central persons was complicated. Table 10 shows that only one supplier person reported the last central person. The nominations are based on the answers received from the other interviewees. There was no difference between the last individual that was selected as a central person and the first to be a non-central person. The decisive factor was that the last person chosen as a central person was a director level person, which is indicated by the first D in the abbreviation. In practice, this means that the cut-off point was a minimum seven contacts to be selected as a central person, and D1b was

¹ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

² Party not selected refers to a part of the organisation that was nominated as the other party of the communication. It is likely to refer to several different persons, but as in any case this "not selected party" was not selected as a central person, there has not been given an effort to identify the individual persons.

selected because of his organisational position. For a complete explanation of the abbreviations of the central persons, see also Appendix 3. All the central persons reported to communicating with each other, as is also presented in Figure 70 in Appendix 4.

Table 10. Selection of customer's central persons³

Persons with whom interviewees have reported contacts	DO	DDs	DIs	MDd	Dlb	First non-central person
No. of supplier contacts	4	3	2	1	1	
No. of customer contacts	5	5	6	6	4	
Contacts/Max. Contacts	9/13	8/13	8/13	7/13	5/13	5/13
Relative Degree of Contacts	69%	62%	62%	54%	38%	38%
Activity of Interaction	Med.	Med.	Med.	Med.	Low	Low

(DDs = Director of Design; Dlb = Director of Implementation; DIs = Director of Implementation; DO = Director of Operations; MDd = Design Manager)

5.3.3 Interaction between Supplier and Customer Maturity

As in both the customer's and in the supplier's internal communication networks, everyone was communicating with everyone, the point of interest was the contacts between central persons of the customer and the supplier. Efforts were concentrated on studying the interface of the customer and supplier central persons. The communication network showed that the supplier's account managers were in contact with all the central persons of the customer organisation, as shown in Figure 10.

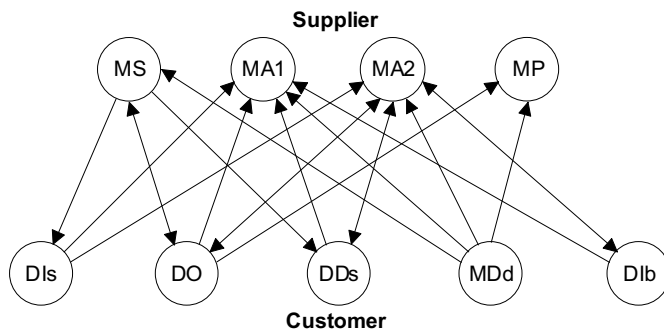


Figure 10. Communication network between the supplier's and customer Maturity's central persons

(Supplier: MA1 = Account Manager, MA2 = Account Manager; MP = Project Manager; MS = Service Manager; Customer: DDs = Director of Design; Dis = Director of Implementation; DO = Director of Operations; MDd = Design Manager; Dlb = Director of Implementation)

³ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

It was decided to simplify the communication network to study the service manager and the project manager. Figure 11 shows that the service manager and the project manager had quite different communication networks. The project manager's contacts were considerably more limited compared to those of the service manager. The project manager concentrated his contacts mainly towards people who were involved in care phase, but had an active role when it came to building the mobile network. The service manager had contacts with all the customer central persons, except one, who had no contacts with either the project or the service manager. This is interesting as this person plays an important role, as his responsibility area covers building the mobile network for one technology sub area in the customer organisation, but he forms his opinions without interfacing with those two supplier persons that have a large responsibility in daily operations.

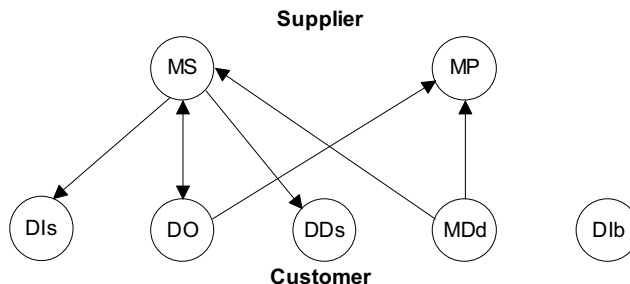


Figure 11. Simplified communication network of the supplier and customer Maturity central persons

(Supplier: MP = Project Manager; MS = Service Manager; Customer: DDs = Director of Design; Dlb = Director of Implementation; Dis = Director of Implementation; DO = Director of Operations; MDd = Design Manager)

The differences between the project manager's and the service manager's contact networks indicates that these persons have divided their work so that there are few overlapping tasks, particularly as the project manager's contacts with the customer were not confirmed by him. The project manager should be able to follow what is going in the area of care with his fewer contacts. The service manager's contacts were quite numerous, but the interesting issue is that both account managers had a wider contact base. The account managers had a large number of contacts among the customer's central persons. This could partly explain why the customer contacts the account managers rather than the service manager on issues that are related to care phase and, according to the ideal model of a supplier, should be directed to the service manager. This happens even if the supplier wishes to have interfaces working differently.

The service manager knows what is in the mobile network and has his own interfaces. In customer company Maturity, both service and project manager have their own contact persons with whom they have discussions. This ensures that things will not get mixed up, which makes it easier to discuss and commit himself or herself from the supplier's perspective. When the communication of the supplier and the customer is viewed in a wider perspective, it can be seen that the interfaces between the customer and the supplier have been established. The communication towards the supplier takes place via the channels favoured by the supplier, even if there is evidence that not all the communication occurs as the supplier wishes.

The relationship between the supplier and customer Maturity has been improving all the time. Earlier on, the relationship was not so good mainly because the supplier closely cooperated with customer Maturity's competitors. Therefore, customer Maturity needed to be careful what information was passed to the supplier. Nowadays, it can be seen that co-operation is in the interest of both parties. (Customer)

5.4 Relation of the Care to Customer Satisfaction

In the customer organisation, most people were directly involved with the care phase. In the supplier's organisation, most people spent most of their time with care phase related issues. The exceptions in the supplier's organisation were the four marketing and sales people, who mainly sell products and services for the care phase, but do not "live" with the care phase to that extent.

Data was unavailable from the supplier organisation because the interviews of customer Maturity were conducted in the early phases of the research process and the question of the relative importance of the care phase was not asked to all the people (see Table 11). By the time that the customer interviews had started, the question had been added and therefore, the customer's response rate is higher.

Table 11. The importance of the care phase in Case Maturity

	Care is relatively less important than its sales	Importance of care equals its sales	Care is relatively more important than its sales	Not available
Supplier (n = 11)	0	0	6	5
Customer (n = 8)	0	1	5	2

Table 11 shows that both the supplier's and customer's personnel regarded the importance of the care phase for the customer's total satisfaction as more important than the relative share of the care sales of the total customer sales would suggest. All the supplier interviewees considered care as more important. In the case of the customer, however, only one person considered that the importance of the care phase to the customer's total customer satisfaction was equal to the relative share of care sales in relation to the supplier's total sales. The remainder of the customer persons who replied regarded the care phase as more important to their customer satisfaction than its relative share of the supplier's sales. Some interviewees judged that the importance of care for the total customer satisfaction could be as much as 50 per cent, but there were also several persons who were reluctant to give their precise estimate of the importance of care. 50 per cent is clearly more than the relative proportion of care sales to total sales.

Customer satisfaction is seen to consist of personal relations, products, and services. None of them alone is enough to guarantee successful performance. (Supplier)

The importance of care phase to customer satisfaction is higher than the relative sales of the care phase compared to total sales. As a reason for this was that the interviewees considered the visibility of the care phase: customer sees most of the tasks performed in the care phase. Care phase is considered more long-term and is a common phenomenon in the customer's network, and thus it is more critical to the customer. One supplier person said that customer satisfaction to the care phase should be measured according to new deals rather than the existing sales of the care phase services. Generally, the care services were considered to be relatively good. Both the supplier and the customer are interested in handling the care phase well and therefore, there can be seen a common goal. A better reception of customer's ideas and a better response to those ideas was seen as a way to improve customer satisfaction. In problem situations, a prompt response to customer demands and quick problem solving are key issues. The supplier believed the customer to be reluctant to provide certain strategic information about itself to the supplier, as the customer may occasionally be slightly suspicious of the supplier's motives.

The customer may be a little reluctant to give credit to the supplier, as the customer thinks that it could also lead to price increases if the supplier thinks that the customer is very satisfied. (Customer)

In particular, reliability of the operations and a reliable mobile network are the most important issues for the customer, who sees that software is essentially a dissatisfier, particularly software updates. The customer finds himself dissatisfied with products that have been used already for longer periods and certain long standing problems remain unresolved. In addition, the customer finds new problems in the products. Changes in the supplier's personnel irritate the customer. On the other

hand, the customer finds itself satisfied with the new functionality of the products, when those functions work as specified. It was also mentioned that the common cultural background eased communication. Sales of the care phase can be less than sales for the project phase. The selling phase is frequently seen as generating the most revenue to the company, as the equipment is a part of the sales phase, but the impact of care phase on the customer satisfaction is significant.

All the suppliers in the market place are capable of delivering similar equipment, the differentiation is done based on the services. Purchase decisions are made based on the technology and pricing. (Customer)

On the whole, customer Maturity feels that the care phase is growing in importance and developing towards a better future. (Customer)

The care phase is more important to the customer than can be read from the sales figures. Even a good product always has some problems; when there are problems, the customer needs to get assistance. In a mobile network, switching related issues in particular are critical as customers build their solutions on top of it. (Customer)

5.5 Most Important Services

In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail. Percentages in Table 12 indicate the percentage of respondents who selected service as being among the most important services. From Table 12 it can be seen that both the respondents and the central persons reported similar views on services. Service A was clearly recognised as the most important service. According to customer three, other important services were service B, service C, and service D. The supplier and its central persons cited also services A, B, C, and D among the most important services. All these services can be considered as conventional after sales services. Services that were not selected by the customer were those services that the customer did not purchase from the supplier.

Table 12. Most important services in Case Maturity

	Supplier (n = 11)	Customer (n = 8)	Supplier's central persons (n = 4)	Customer's central persons (n = 5)
Service A	90%	100%	75%	100%
Service B	40%	38%	50%	20%
Service C	40%	25%	50%	40%
Service D	20%	25%	25%	20%
Internet Solutions	10%	13%	0%	20%
Service E	0%	0%	0%	0%
Service F	0%	0%	0%	0%
Service Manager	10%	25%	0%	20%

The customer rated services A and B as the two most important services, whereas the customer's central persons rated services A and C as the most important services. These three services received the highest number of nominations among the supplier and its central persons. The customer's central persons identified both Internet solutions and the service manager among the most important services, whereas none of the supplier's central persons considered those services among the most important services.

In all of the services, the evaluations of the supplier and customer in general, as well as the central persons of the supplier and customer, are all within 25 per cent units of each other. Only in service B did the supplier's and customer's central persons have a greater difference in their opinions. All of the opinions were relatively close to each other as one selection made by the supplier's central persons represents 25 per cent units.

5.6 Analysis of Customer Satisfaction and Loyalty with Respect to Services

Interviewees were asked about customer satisfaction and loyalty with respect to services A, B, C, D, E, F, and the service manager (Table 13). As the data in services E and F was limited, the means and standard deviations for these two services are not presented here. Comments on Figure 12 to Figure 15 are presented in the following chapters where services A, B, C, and D are discussed. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Table 13. Supplier's and customer's satisfaction and loyalty scores with respect to services in Case Maturity

Service	Satisfaction	Loyalty	Satisfaction	Loyalty
Service A, entire sample	Supplier (n = 11)		Customer (n = 8)	
Mean	6.75	9.25	7.81	8.63
Standard deviation	1.65	0.68	1.22	1.30
Service A, central persons	Supplier (n = 4)		Customer (n = 5)	
Mean	6.38	9.00	8.10	8.40
Standard deviation	2.53	0.82	0.42	1.14
Service B, entire sample	Supplier (n = 8)		Customer (n = 5)	
Mean	6.94	8.38	7.50	9.80
Standard deviation	0.56	1.03	1.32	0.45
Service B, central persons	Supplier (n = 4)		Customer (n = 3)	
Mean	6.88	8.13	7.00	9.67
Standard deviation	0.85	0.63	1.00	0.58
Service C, entire sample	Supplier (n = 9)		Customer (n = 7)	
Mean	6.78	8.17	7.50	8.71
Standard deviation	1.48	2.12	1.22	1.50
Service C, central persons	Supplier (n = 4)		Customer (n = 4)	
Mean	6.38	8.00	7.63	9.00
Standard deviation	1.97	1.83	0.48	1.15
Service D, entire sample	Supplier (n = 9)		Customer (n = 7)	
Mean	6.00	7.56	7.64	7.93
Standard deviation	1.20	1.49	1.31	2.98
Service D, central persons	Supplier (n = 4)		Customer (n = 4)	
Mean	6.13	7.75	7.75	7.75
Standard deviation	1.03	1.19	1.50	3.86
Service Manager, entire sample	Supplier (n = 5)		Customer (n = 7)	
Mean	7.90	7.00 (n = 2)	7.57	6.00 (n = 3)
Standard deviation	0.89	1.41 (n = 2)	2.51	1.73 (n = 3)
Service Manager, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	7.50	6.00 (n = 1)	8.25	6.50 (n = 2)
Standard deviation	0.87	--- (n = 1)	0.50	2.12 (n = 2)

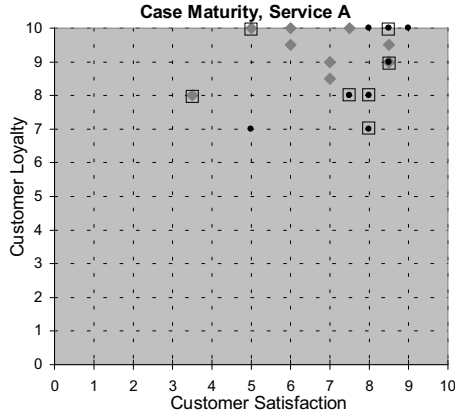


Figure 12. Customer satisfaction-loyalty matrix for service A

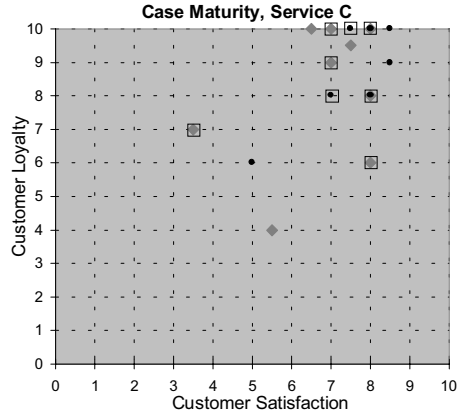


Figure 14. Customer satisfaction-loyalty matrix for service C

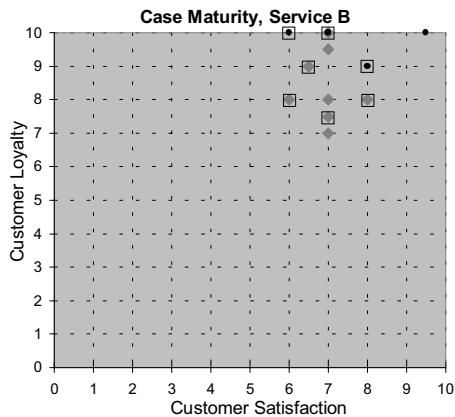
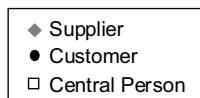


Figure 13. Customer satisfaction-loyalty matrix for service B



Figure 15. Customer satisfaction-loyalty matrix for service D



Personnel even at manager level within the customer organisation did not always know what certain services consist of, as the services were frequently considered complicated or the content of the services were not known at all. It was difficult to differentiate one service from another. Services carried out by the local customer services unit were considered good and better than the product itself. Some of the interviewees among the supplier's personnel believed that some of the services are relatively captive in nature.

Earlier on, the competence of the supplier's personnel and local presence have been cited as key issues for the customers. (Customer)

During the interviews, it was recognised that some of the supplier's operative level people had limited knowledge of the financial impact of the services to the supplier. It appears that the focus of lower level people is directed towards increasingly detailed issues and the whole picture is less visible to the lower level people than to the persons in management positions.

Customer Maturity is quite careful about the information they will pass to the supplier; they appear to be reserved, as though they are afraid that some of their information could be passed further or that the supplier would possess too much information about them.

The customer feels that competition keeps the suppliers on their toes, so that they will not become too self confident. (Customer)

A customer commented in one of the interviews that true loyalty does not exist, as the customer is forced to buy certain of the services. Currently, the customer does not see too many alternatives, particularly in the field of conventional maintenance. Retention of the care agreements is considered seen as artificial by the customer, as not renewing the contract would mean that the customer would be prepared about to give up the equipment delivered by the supplier. One interviewee in the supplier organisation believed that money cannot buy customer's loyalty.

Generally, the operators may praise their own networks too much. It could give a false idea of the quality of the competitors' networks, which could lead the operator to believe that the other operators are getting better service than they are. (Customer)

With good service, the supplier could compensate for possible problems in the product. (Supplier)

5.6.1 Customer Satisfaction and Loyalty with Respect to Service A

When comparing customer and supplier, it came out that the customer's personnel (7.81) are more satisfied (Table 13) than the supplier's personnel (6.75). The supplier's personnel (9.25) think that customer loyalty is even higher than is indicated by the customer (8.63). When comparing the customer and its central persons, it came out that the customer (7.81, 8.63) and the customer's central persons (8.10, 8.40) awarded similar evaluations for customer satisfaction and customer loyalty. The supplier's central persons (6.38, 9.00) have the most negative evaluation of the customer's satisfaction. The central persons of the supplier are somewhat more optimistic about customer loyalty compared to the customer's central persons.

A non-central person reported the most critical customer statement (5, 7) in Figure 12. This person identified particularly long failure correction times and failures to deliver software according to agreed schedules as the principal reasons for his lower customer satisfaction ranks. The lowest supplier satisfaction score (3.5, 8) was reported by one of the supplier's central persons. Worthy of note is that the central persons had similar satisfaction scores. Service A can be briefly characterised as follows: the way to success is considered by the supplier to be superb service, which can be achieved through proactiveness. Superior service does not necessarily require physical presence at the customer's premises.

The role of customer services is seen as very important in service A. The customer expects that the supplier's services are capable of supporting the customer when a new package (release) is brought to the network, as the customer expects certain problems in such cases. The customer expects a product to be operational when it is brought into the network, but occasionally there are faults that have been visible to the end-users. Frequently, when a new product is launched, there seem to be some problems. As customer Maturity has been a pilot customer for a number of software deliveries, there have been more faults than customer Maturity would expect to have normally. This has put stress to the services, as the services should be capable of compensating for the pitfalls experienced with the products.

The support for advanced services is clearly worse than for basic services. (Customer)

The question customer Maturity constantly must ask itself is whether it is possible to combine being a front runner with having a very good network quality. (Customer)

From the customer's point of view, care can be a slightly problematic area, as the customer may wish to protect some of the information and prevent access to it by its supplier. Consequently, the supplier may miss some necessary information, which could cause problems for the customer later

on. The customer is to a certain extent worried about how to support the different software for different network elements, as all are dependent on each other. The co-ordination of these dependent activities is seen as the weakest link both internally within the customer organisation and particularly in the supplier's organisation. The customer saw that the service manager is necessary to manage this area.

The contact person system has worked nicely, as a recent release that was brought into the network has been one of the best software projects in history. (Customer)

Failures are part of the nature of the business. As software is becoming more and more complex, it is inevitable that the number of faults similarly increases. (Customer)

When changes made in hardware are combined with software releases, things become complicated; this is becoming more commonplace with new emerging technologies. If the customer attempts to optimise his/her cost structure, he/she will not have extra resources available for the aggravation that problems cause. In addition, customers are reluctant to make changes to their network continuously either.

The customer criticised the supplier about its new software releases, and claimed that the fault correction times for software tend to be long. For the customer, the software correction times seem to be longer than according to the supplier, as the customer does not raise an official failure report as soon as they have discovered a failure. The customer first makes an unofficial claim and only after that do they raise an official failure report. For the customer, there was no big difference between an official failure report and an unofficial first claim. A reason for slow fault correction times is thought to be the pressure to come up with a new release and therefore, fault corrections are delayed. The supplier regards its services and products are being of good quality.

The supplier sees that the basic software products are managed quite well, but new products have been more problematic. (Supplier)

The fault correction times should be improved, for example by faster and more direct escalation to the product line. (Supplier)

Whenever the problems are seen also by the customer's customer, there will be a fast temporary solution available. Things are sorted out and the solution will carry the customer over the worst. (Customer)

The satisfaction of the advanced services was seen as neutral, even though the supplier has the opinion that the customer will not purchase the product or the service. This could indicate that, for newer services, the captivity of service A may be weaker or may indeed no longer exist. Table 13 and Figure 12 indicate that the nature of service A is captive, as customer loyalty is higher than satisfaction. The customer believes that, as long as the supplier's equipment is used in the network, the customer is forced to purchase the service. Findings indicate that the customer's loyalty for service A may not be as high in the future as it has been so far. The reason for this is the arrival of new technological solutions. According to the customer, their satisfaction with these services has been slightly lower, but their loyalty seems to be considerably lower level than it could be assumed based on Figure 12. There could be a slight indication that the nature of service could be changing in the future, based on the responses of the service manager and the leading person in the customer organisation. It would appear that the supplier separates service and product. The "mind set" of the supplier seems to be that the service is good but that the product is not as good, whereas the customer only considers what they get and thus the service and product are bundled together. In customer responses, both the product and service were criticised when service A was under consideration.

5.6.2 Customer Satisfaction and Loyalty with Respect to Service B

When comparing customer and supplier (Table 13), it came out that the customer (7.50, 9.80) reported a higher level of customer satisfaction and loyalty than did the supplier (6.94, 8.38). When comparing supplier and its central persons, the evaluation of the supplier (6.94, 8.38) for satisfaction and loyalty are very similar to the supplier's central persons (6.88, 8.13) means, even if the opinions of the central persons are slightly more negative for customer satisfaction and customer loyalty. When comparing the customer and its central persons, the customer (7.50, 9.80) reported similar scores to those of the customer's central persons (7.00, 9.67). The customer considers it almost guaranteed that they will continue purchasing this service from the supplier. The supplier finds that the customer is likely to continue purchasing the service. The supplier's central and non-central persons reported the lowest scores. The lowest scores of the customer were reported by the central persons. It is noticeable that three customer interviewees ruled themselves out of this question as they found themselves in a position whereby they do not have proper knowledge of the service and its performance.

Figure 13 demonstrates that all individual scores are plotted to the top-right corner of the matrix, quite close to each other. Based on the plotted points and the given comments, particularly by the customer, the customer is loyal because of the nature of the service. This can be concluded from the extremely high loyalty value of 9.80. The current state of the service appears interesting as this service has the highest loyalty scores for the services of customer Maturity, but at the same time, customer satisfaction figures are no higher than for the other services.

The customer sees that the way to improve performance is by lobbying and putting pressure on the supplier. (Customer)

The interviews revealed that service B is a compulsory service for the customer. The number of faulty pieces of equipment has been relatively high; therefore, the turnaround times should be fast. Turnaround times have been slower than agreed and the reporting system has not been at the level it should be. Customer Maturity had not received mutually agreed reports on the service. This was explained by the arrangements that had recently changed with service B. The customer had relied earlier on these reports in order to check the progress of the service. Recently, it has been difficult for the customer to judge whether the service has been working according to contract, as there no reports had been available. Even though the lack of reporting caused discomfort, the customer's evaluation on service B was that it was working at least satisfactorily. Service B has not experienced any dramatic issues, apart from some component problems and design failures. The service currently measures operative efficiency but, according to the customer, the true quality of the hardware remains unmeasured.

5.6.3 Customer Satisfaction and Loyalty with Respect to Service C

When comparing customer and supplier (Table 13), it came out that the customer's personnel (7.50, 8.71) are more satisfied and more loyal than the supplier's personnel (6.78, 8.17) assume. The customer believes that their probability of repurchasing is high. When comparing the customer and its central persons, it came out that the customer's central persons (7.63, 9.00) share a slightly more positive view of the service than the customer (7.50, 8.71). When comparing the customer's central persons and the supplier's central persons, it came out that the customer's central (7.63, 9.00) persons are far more positive about the service than the supplier's central persons (6.38, 8.00). The customer's central person's have very similar evaluation of how satisfied they are with the service: the satisfaction scores of the central persons vary from 7 to 8.5.

The customer could not remember the last time that the service had been used. But customer perception of the service is that the service may be a little on the slow side if it were be needed. (Customer)

The same non-central person as in service A reported (Figure 14) the most critical customer statement (5, 6). This person felt that, if the service were provided, it may be a little/somewhat slow. The lower supplier scores were reported by two central persons and by one non-central person. In

the case of service C, some people can remember when the service was last utilised and others cannot. From the supplier's perspective, it would be important to mention the performance level of the supplier, in case the service needed to be activated. The current image of the smoothness of the service could be improved, as at the moment customer perception is at least partly based on image.

The nature of service C was characterised by claims that the operator provides "the belt and the suspenders" and the supplier provides "rope" to keep the trousers up. This arrangement is also useful for securing responsibility. (Customer)

The customer buys the service, as a kind of "insurance" as a possible breakdown would be too costly for the customer. If an outage occurred, the cost of service C would be secondary compared to the financial damages as the customer would lose revenue and the reputation of the customer would be harmed. Customers believe that they have enough experience in-house, but the service was bought in order to have enough back-up resources. After all, the manufacturer of the equipment should have the best knowledge of their own equipment. Based on the individual plots in Figure 14, one can estimate that service C is also a captive service. For all means, loyalty received higher scores than did customer satisfaction. This further indicates that this service is a service that the customer is forced to buy. There were only a small number of complaints about the service or on perceptions of how the service was assumed to perform.

5.6.4 Customer Satisfaction and Loyalty with Respect to Service D

Reported scores for service D are similar to the previous services in terms of the sense that the supplier remains more pessimistic about their services compared to customer opinions. When comparing customer and supplier, it came out that the customer (7.64, 7.93) and the supplier (6.00, 7.56) reported similar loyalty figures, but the customer reported higher customer satisfaction. When comparing the supplier and its central persons, it came out that the evaluations of the supplier personnel (6.00, 7.56) and the central persons of the supplier (6.13, 7.75) are much the same. When comparing the customer and its central persons, it came out that the customer persons (7.64, 7.93) are close to the customer's central persons (7.75, 7.75). Removing the most negative customer score (6, 2), which was reported by a central person, would not change the results a great deal, although his score was located quite far from the rest (Figure 15).

In service D, the customer's loyalty scores were similar to those relating to satisfaction. Therefore, purely based on the customer mean, it would be hasty to draw conclusions. Based on the supplier's mean, one could assume that the satisfaction-loyalty curve could be slightly more on the captive side. Nevertheless, it is somewhat likely that this service is more neutral than the previous services. Based on the plotted points, one could assume that a potential satisfaction-loyalty curve would be more of a forced-loyalty type of a curve, even taking into account the lowest reported customer score. Although some of the customer's personnel would be willing to change their training provider, or at least search for the other options. In the case of service D, different persons had considerably different evaluations of the services. The spread of individual marks was quite broad. The supplier's opinions were more uniform than were those of the customer.

Service D has produced welcome progress by building systematic training courses for the customer. Service D should be quickly available and tailored when necessary. The customer appears generally satisfied with technical service D; the quality of training is considered good and the structures of the training are reasonably good. The customer found it difficult if the courses were run in a foreign language, as they would prefer having courses in their own language. Metrics used for the measurement of the service are not necessarily useful, as all the courses are valued equally in evaluation. Customer Maturity had their own people running some training for their own people, but the proportion appears to be diminishing, as it involves a considerable amount of work.

From the purchasing point of view, it has been easy for the customer to outsource service D. (Customer)

There is a trend whereby the supplier must provide increasingly sophisticated courses for the current technologies. With the new technologies, the supplier is assumed to be in strong position, at least initially, to provide basic courses. However, the new technology courses should be made

available at an early stage. The customer claims that pilot courses are difficult to arrange, as the level of participants can vary considerably. The customer has found an inventive solution in pre-determining the level of participants.

In general terms, the courses are run professionally and are of high quality. The contents of the courses and their material are good, but the contents of the courses should be discussed with the customer before the courses take place in order to tailor individual courses. In such courses, the customer receives information on how to handle certain piece of equipment, but would like to have more choice for the demanding courses. The customer was similarly disappointed in that some of their own personnel had been more knowledgeable about the subject of the course than the trainer himself. At the same time, the supplier wondered if the knowledge levels of the customers had improved to such a degree that the current level of the training would not be sufficiently demanding. The supplier recognised that some of the new technology courses had been of poor quality. Nevertheless, the customer takes advantage of training services to a considerable degree.

A central person provided (Figure 15) the most critical customer statement (6, 2). This person identified in particular recent new training that he had been very disappointed with. Although he was generally satisfied with the services, he believed that the supplier did not have the capability to train the customer in the new technologies. He claimed that the supplier's training competencies lie in the training of established technologies. The lowest supplier score (3,5, 5) was provided by one of the supplier's non-central persons, as in Figure 15. His opinion was based on his knowledge that the customer was dissatisfied with certain courses, but he thought that the customer would still purchase the courses in the future.

Opinions were more dispersed (Figure 15) than in the case of the services previously mentioned. This can partly be explained by the mixed feelings about the service, as there had been some more serious failures in delivering quality service, but people are not unanimous about the general effect. Based on the qualitative feedback, service D received far harsher criticism than did any other of the services in Case Maturity. One individual incident where service delivery had failed was mentioned in almost every interview. When the service is judged, it appears that the incident is considered a single failure and has not harmed the reputation of the service, but it has worsened the results, as there were no other complaints about the service.

If you do not get into the first training programme, you will find yourself a teacher on the next one. (Customer)

When it comes to providing new courses on new technologies for the customer, the supplier does not have the necessary competencies to provide high quality courses. From the customer's point of view it seems that suppliers have chiefly focussed on providing courses for their core products. (Customer)

In training, some of the courses are showcases for the supplier, for example in new emerging technologies that are crucial for the future of the customer. This guarantees that the customer's management focus is on related issues. Consequently, whatever is done related to those new technology issues, their importance is likely to be exaggerated. At the same time, many people will hear about issues related to the new technology in the customer organisation. Therefore, whatever the supplier does, good or bad, will be reflected in the perception of the supplier's performance in the long term. Overfocusing on those issues could be beneficial for the supplier, as it may cause an oversatisfaction effect.

5.6.5 Customer Satisfaction and Loyalty with Respect to Service E

In service E, the data were limited. The supplier had not previously sold the service to the customer although the service exists in the supplier's service offering. Lately, there had been some sharing of ideas, but idea sharing has not taken place very frequently. Customer Maturity found idea sharing useful once it was arranged. Consequently, the question asked of the interviewees was re-formulated. The question was posed as to how the parties would think the customer would perceive the service, if the customer purchased it, and what their perception of the likelihood of the customer's purchasing the service would be after they use it. Only one of the supplier persons and

one of the customer persons, both central persons, were willing to give an indication of their ideas. From the customer side, the comment is valuable, as the person in charge of the service was capable of giving his perception of the service.

Only the customer knows the network in detail, therefore the customer finds it difficult that an outsider could be providing major help to them. (Customer)

Both persons reported their satisfaction and loyalty scores with the same satisfaction and loyalty scores. In other words, the satisfaction and loyalty was placed "in the middle". The supplier's person was doubtful whether the customer would have a perception or view on the service. The customer's evaluation is more on the negative side. The customer had mostly performed the service by themselves for strategic reasons, as they consider the network quality to be one of the most important issues. Customer Maturity measures their network in several ways, using the methods that are available from the supplier, but in addition they have developed methods of their own. Therefore, they would not be very interested at all in purchasing this service from outside. The supplier's evaluation appears overly optimistic compared to the customer's as regards providing this service to the customer. Because of the limited data, no assumptions are made of the customer satisfaction-loyalty curve.

5.6.6 Customer Satisfaction and Loyalty with Respect to Service F

Service F service was also a service with limited data. The customer had not utilised the service for some time; according to the customer, because of their own competence, they do not need this service. Two supplier persons who reported their scores for the service were operative level persons from non-management positions, and they both were considered non-central persons. It is interesting to note that these two scored this service quite highly in the loyalty scale. They rated it close to 90 per cent probability of repurchasing, whereas the other interviewees gave the impression that they considered the likelihood of purchasing service F quite unlikely.

5.6.7 Customer Satisfaction and Loyalty with Respect to Internet Solutions

In Case Maturity, the Internet was seen as a way to improve the efficiency of communication. The Internet had already been a way to deliver services successfully to the customer. An example was in training. The potential of the Internet was seen larger as the number of users grows, and therefore the supplier assumed that the Internet would increase the care phase sales in the future or at least provide certain cost savings. Transition to the Internet was seen as an area where customer Maturity could improve their operations. Customer Maturity anticipated that they would require in the datacom business a service level approach from their suppliers.

The customer and supplier satisfaction scores were relatively close to each other. Based on the reported satisfaction scores, the customer considers the Internet solutions quite good. Only two persons on the supplier side and one person on the customer side gave a score for customer loyalty, as most people ruled themselves out as being incapable of judging customer's loyalty, as the service was very much in its initial phase. The customer person, who gave a score for customer loyalty, also rated the Internet solution among the two most important services. It appears that in Internet solutions, the supplier believes that they would be capable of re-selling the service, whereas the customer remains more sceptical.

The current version of the internet based tools are not yet found too useful as they lack data, and therefore currently their usefulness is questionable, but it is seen as an important media in the future. (Customer)

5.7 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager

A chief task for the service manager is the role of co-ordinator of the everyday tasks of the operations, synchronising the operations, updating the network and correcting faults in the network. It was generally noted that the customer is one of the front-runners with their network, which brings additional stress to the customer. As the growth rate of the network is stabilising, so the importance of operations and maintenance is similarly growing in importance. This becomes apparent as the customer focuses more on such efficiency metrics as cost of operating, used capacity, quality metrics such as usability, blocking, efficiency of the investment, throughput times, speed, inventory turnover, and churn. The importance of financial metrics has grown, particularly the importance of bringing down the cost of operating the network. For example, all the minor changes to the network could be done progressively in a concentrated way. In the future, growth will slow down; customer Maturity takes pre-emptive steps in order to prepare itself for future challenges. With all these changes, it is important that the supplier be able to demonstrate increasingly the added value that the supplier provides to its customer.

The value of the service manager concept is that the customer has been clearly shown that the customer is taken care of. It has been made easy for the customer to contact the supplier. At the same time, services have become more easily measurable. (Supplier)

When comparing customer and supplier, it came out that the customer (7.57, 6.00) is less satisfied and less loyal than the supplier (7.90, 7.00) assumes (Table 13). The supplier believes that the customer's likelihood of repurchasing is lower than the scores reported for customer satisfaction, and the same can be applied to the customer's opinions. The loyalty figures for the service manager are somewhat limited, as the service manager concept was not an itemised service in the care contract. Therefore, a relatively large number of persons were not willing to score customer loyalty.

Based on the qualitative feedback and the reported scores, the customer is relatively satisfied with the service manager. Many quite specific remarks were provided in the interviews about the service manager and the service manager concept itself. The customer sees the service manager concept as a clear improvement over the old mode, which did not include an individual responsible for the care phase. The service manager is a clear contact point that clarifies matters, and the customer is not forced to deal with many persons. The service manager has been considered extremely useful when problems arise and someone is required to co-ordinate the process. When there is trouble, it is easier from the supplier's point of view if there is only one contact point, who can discuss and manage things with the customer. The supplier's point of view is that the contact point should be the service manager.

The best thing about the service manager is the awakening to the fact that it is not enough to deliver high-quality products and services. It is also necessary to manage the customer relationship itself in all its phases. (Supplier)

The service manager has improved customer satisfaction with the care phase. At the moment, the customer's opinion is still person dependent, because the processes that handle the customer issues are not well established. The service manager should not change often, as it takes a year to become familiar with the job and the customer, and only after that does/can the service manager become truly productive. When persons change, that causes problems. (Customer)

Clearly a positive side of the service manager is the covering of services and products and linking them with the customer's business processes. The service manager is useful for new business areas, as well as for following more carefully the business plan. (Customer)

When the service manager is contacted, things start rolling. (Customer)

The customer realises that, with the account manager and the service manager, things frequently must be agreed twice. For example, frame agreement negotiations contain a lot of issues that are not visible in the care agreements; therefore, the service manager is frequently a little late in the

negotiations. The service manager is not always comfortable with the care agreement negotiation, as they cause considerable stress and consume lot of time. However, the supplier sees that the selling of services should already be taken into consideration in the tendering phase. The tenders are prepared for the care phase in co-operation with the product manager of services. The care phase should focus on maintaining customer satisfaction and identifying potential problems. At the beginning, the customer had high expectations for the service manager. It was hoped that problems could be solved before they appear. If things do not run smoothly, the supplier will be criticised. There is a constant need for communication as the current speed of changes is huge, but generally things have improved over time.

Before the service manager, there was no counterpart for the customer in the supplier organisation. The customer interpreted this as supplier not taking its responsibility for its actions. (Customer)

5.8 Customer Compass

Chapter 4.7.7 (Customer Compass) explains in detail how the grading of customer compass was carried out. Customer relationships were divided into four dimensions. Based on the interviews, in the account the results are displayed in Figure 16. The total number of respondents was eight supplier persons and seven customer persons. Generally, the relationship can be characterised by the following comments:

The customer-supplier relationship is been seen as a good one. Both the supplier and customer seem to be in the same boat. (Customer)

The customer never feels that they have been left alone and that is the best part of the care. (Customer)

Figure 16 shows that generally the supplier sees himself as having a closer relationship with the customer whereas the customer sees himself being distanced from the supplier. An exception is the service manager who evaluated the supplier's relationship more similarly with the customer personnel.

In **customer portfolio management**, the supplier (4.63) believes that they are treating the customer as an individual, whereas the customer (3.43) sees itself as being treated less as an individual. The main reason for this can be seen in how the customer's product requests progress in the supplier's organisation. The supplier's personnel seem to focus exclusively on their immediate service and forget how product decisions affect the customer's view. The service manager shares more the view of the customer in this axis (4.00).

The customer felt that customer Maturity had previously a special position, but nowadays this position has diminished considerably. Because of the nature of the customer as a technological leader in the market place, the customer is quite frequently treated as a special case. Customer Maturity wished they could get special treatment from the supplier but they feel that they have not got that. The customer sees that they are treated by the supplier in the same way as any other supplier would do. However, when it comes to producing added value for the customer, one can notice that the supplier is learning and bringing increasing value to the customer.

Customers believe that they are treated less individually than before, but partly because of their innovativeness, they get more attention than they would otherwise. (Customer)

The service manager sees the customer more as just one customer among other customers. The other customers benefit from having customer Maturity as their supplier's customer. The service manager's comment on the customer portfolio was interesting; he feels that he is to some extent an independent observer and believes that the supplier treats the customer the same as everybody else, because he is fully dedicated to the customer. The sense of individualism is seen mainly in contacts with individual persons, particularly on the sales side.

The customer sometimes feels frustrated as they feel they have wasted time in order to get a certain feature into the supplier's production which has then not been accepted. (Customer)

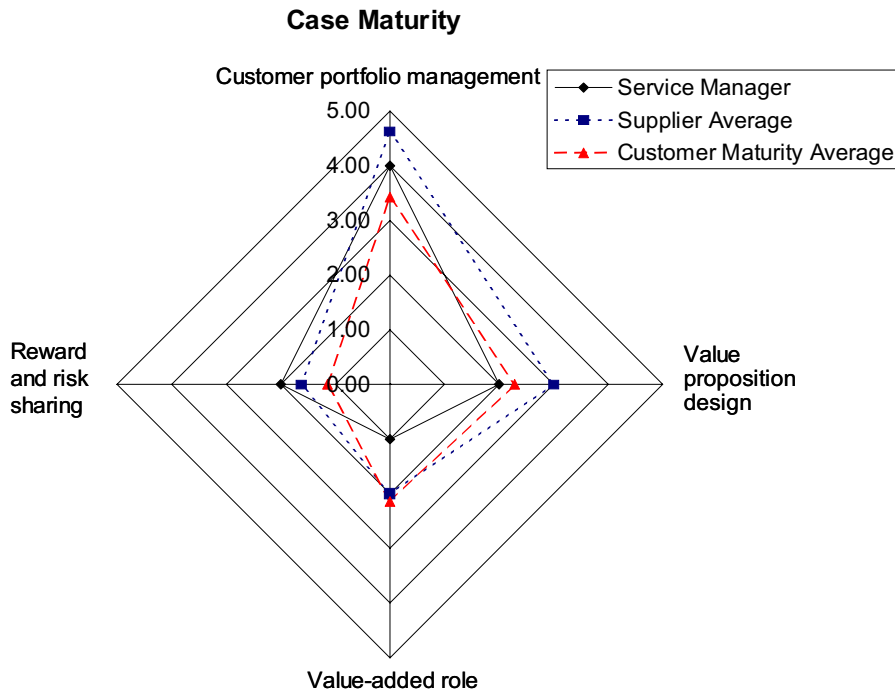


Figure 16. Customer compass of customer Maturity

On **value proposition design**, the customer (2.29) and service manager (2.00) again have very similar ideas, whereas the supplier (3.00) generally sees that they have moved more towards a wider scope in offering value. The supplier believes that, in the value proposition, the supplier is trying to expand the core product supplier's reputation. The supplier is trying to move forward in the customer's value chain. The customer considers the system provided by the supplier a basic communication system on which the customer can build their other systems.

The supplier is extending its value proposition further to get rid of its focus on being purely core product-oriented. (Customer)

In the **value-added role**, the customer (2.14) and supplier (2.00) share the same views about the supplier being very much product-driven while having to some extent plans to move towards process orientation. The service manager (1.00) has the most pessimistic view, stating that the supplier has a product-manager-based approach. All the interviewees found it impossible that the supplier would transform themselves into a network manager. It is a common view that the customer and supplier's business processes were more closely (inter)linked with each other, customer loyalty would improve.

The account manager often tries to sell "features". The customer is now focusing more on the processes and the investment itself, i.e., how the customer's business will benefit from buying a "feature". Therefore, customer Maturity would like to see selling argumentation being done by the supplier in a form that justifies the investment. (Customer)

The supplier still starts more from the product perspective; even there one can see a trend towards a more customer-oriented approach. The supplier tries to be customer-oriented, but both the supplier and the customer do not always know what are their needs. (Supplier)

In **reward and risk sharing**, the customer (1.14) saw the relationship as almost purely a market-based approach. In contrast, the supplier (1.63) and service manager (2.00) detected a tendency towards performance based pricing, but still at the moment mainly being in a market based approach. Particularly in the area of reward and risk sharing, the parties do not see many incentives for closer collaboration. Both still focus very much on their own businesses. This could be interpreted to confirm the attitude of the interviewees that it is better to keep the supplier at arm's length.

The service manager realises that the performance-based approach has been tried with the customer, but so far the customer has been reluctant to pay extra for good performance. There could be potential in the future with the new technologies, where the likelihood of success is seen as more doubtful. (Supplier)

5.9 Summary

Customer Maturity was a mature operator that had had its network in commercial use for over seven years. The communication network of supplier-customer was somewhat limited, but those persons who were in contact communicated frequently. The service manager had fewer customer contacts in care phase than did account managers. Most of the customer-supplier communication was conducted via the channels that the supplier preferred, which was via the account manager, project manager, and service manager.

Care phase was considered more important to customer satisfaction than suggested by the relative size of care sales to total sales. The impact of the care for total satisfaction was considered substantial. The customer and the supplier agree on the relative importance of the individual services. Both the customer and the supplier considered service A the most important service. Other important services were services B, C, D, Internet solutions, and the service manager. The customer's and supplier's perceptions about individual services were relatively similar. The supplier had a more negative perception of the supplier's services than the customer's own personnel did. The service manager concept was seen as positive and value-adding.

The relationship has been good between the supplier and the customer. Customer Maturity feels that they have been a guinea pig for the supplier, and is no longer willing to tolerate that role. This kind of relationship is difficult to control or manage. If a customer wishes to be sure that there will be no technological problems, it should follow other customers as they have already tested the technologies. This is a feasible option only if a purchaser lacks competition. If the purchaser is a high-tech company, this is not possible. The purchaser needs to conduct a cost-benefit analysis to ascertain if the risk is worth taking. Customer Maturity observed that they had learnt more when they were involved in the development of new products; they got more insight into the product and became familiar with it before their competition. Learning and co-operation can therefore provide an edge over the competition.

6 CASE YOUTH

6.1 Background and Position of Company Youth in the Market Area

Customer Youth and the supplier have had approximately a seven year relationship. The current mobile network has been in commercial use for approximately five years. The supplier has been the only supplier for the particular technology, and additionally delivers equipment to the competitors of customer Youth in its market area. Customer Youth has already been primarily in the care phase for some time and the operation of the network is the main focus of customer Youth. The focus of the customer is network quality and capacity. The competition in customer Youth's market area is becoming even stiffer as new operators enter the market.

Five customer persons and eight supplier persons were interviewed. All of the interviewees also provided quantitative information regarding the services. In the supplier organisation, seven people were natives and one was expatriate. All customer persons were locals. The number of services studied was eight. The interviews were carried out between June and July in 1999.

6.2 Customer Contacts and Relationships

All the supplier (n = 8) and customer persons (n = 5) answered the questions on their relationships with the supplier and customer Youth. The interviewees reported contacts with 41 different persons on issues related to the care phase: 18 supplier persons were identified, and 23 customer persons were identified as the other party in the communication.

6.2.1 Contacts within the Supplier Company

Among the supplier's personnel, three persons were identified as central persons. They were the service manager and account manager, who were high activity interactors, and the project manager, whose activity of interaction in care phase was medium. Table 14 represents the number of contacts that other interviewees reported having with the central persons. Table 14 shows as a percentage the number of contacts that the first person to be omitted as a non-central person and the party not selected had received. For a complete explanation on the abbreviations of the central persons, see Appendix 3. The party not selected in this case identified a part of the organisation that consists of a reasonably large number of marketing people. The first non-central person then had already less than half the number of contacts that the last selected central person had.

The service manager was recognised by all interviewees as a person that they were communicating with (Table 14). The account manager was also very active in the care phase. The supplier's central persons were all involved into two-way communication with each other and the frequency of their communication is very high, which is presented in Figure 72 in Appendix 4.

The role of the account manager is less in the care phase. (Customer)

Table 14. Selection of supplier's central persons⁴

Persons with whom interviewees have reported contacts	MS	MA	MP	Party not selected ⁵	First non-central person
No. of supplier contacts	7	7	5		
No. of customer contacts	5	3	2		
Contacts/Max. Contacts	12/12	10/12	7/12	7/13	3/12
Relative Degree of Contacts	100%	83%	58%	54%	25%
Activity of Interaction	High	High	Med.	Med.	Low

(MA = Account Manager; MP = Project Manager; MS = Service Manager)

6.2.2 Contacts within Customer Company Youth

In the customer organisation, the categorisation of personnel as central persons and non-central persons was complicated, as can be seen in Table 15. Eleven customer persons were identified as central persons, two of whom were found to be low in their activity of interaction, but their organisational position as at least director level justified them as the customer's central person. The difference between the last individual selected as a central person based on the number of contacts (MOs) and the first to be a non-central person was two nominated contacts more. One of the interviewees was not identified as a central person. For a complete explanation on the abbreviations with regard to central persons, see Appendix 3.

⁴ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

⁵ Party not selected refers to a part of the organisation that was nominated as the other party of the communication. It is likely to refer to several different persons, but as in any case this "not selected party" was not selected as a central person, there has not been given an effort to identify the individual persons.

Table 15. Selection of customer's central persons⁶

Persons with whom interviewees have reported contacts	DO	MOB	CT	DD	MDs	MDq	Mon	MDb	MOs	DI	C1	First non-central person
	No. of supplier contacts	6	5	6	5	5	5	4	4	4	4	
No. of customer contacts	3	3	2	3	3	2	3	3	3	1	0	
Contacts/Max. Contacts	9/12	8/12	8/13	8/13	8/13	7/12	7/12	7/13	7/13	5/13	2/13	5/13
Relative Degree of Contacts	75%	67%	62%	62%	62%	58%	58%	54%	54%	38%	15%	38%
Activity of Interaction	High	Med.	Med.	Med.	Med.	Med.	Med.	Med.	Med.	Low	Low	Low

(CT = Chief of Technical; C1 = Chief of 1; DD = Director of Design; DI = Director of Implementation; DO = Director of Operations; MDb = Design Manager; MDq = Design Manager; MDs = Design Manager; MOB = Manager of Operations; MOn = Manager of Operations; MOs = Manager of Operations)

Much of the interaction in the customer's internal communication network was among the interviewees (Figure 17). Most of the communication in the customer organisation took place within their internal "silos", i.e., departments. The managers under one director primarily communicated with each other; thus, DO, MOB, Mos, and MOn primarily interact with each other. The same applies to DD, MDb, MDs, and MDq. With a larger number of interviews, more decisive conclusions about the customer's internal communication could be made.

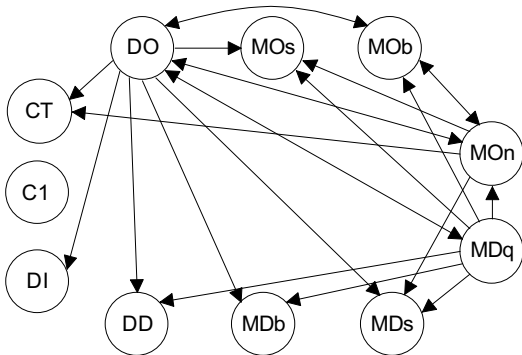


Figure 17. Communication network of customer Youth's central persons⁷

(CT = Technical Chief; C1 = Chief of 1; DD = Director of Design; DI = Director of Implementation; DO = Director of Operations; MDb = Design Manager; MDq = Design Manager; MDs = Design Manager; MOB = Manager of Operations; MOn = Manager of Operations; MOs = Manager of Operations)

⁶ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

⁷ Figure 17 is derived from the Table 15, as the persons selected as central persons in Table 15 were selected and their contacts with each other were drawn to Figure 17, as they had reported in the interviews.

6.2.3 Interaction between Supplier and Customer Youth

Figure 18 shows only the communication between the supplier's and customer's central persons. The account manager is in contact with all the customer's persons. Therefore, the next focus is to discover if there are differences between the service manager and project manager.

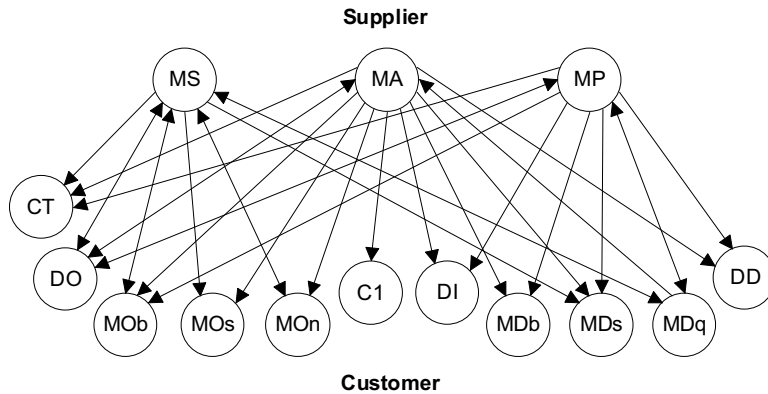


Figure 18. Communication network of the supplier and customer Youth central persons

(Supplier: MA = Account Manager; MP = Project Manager; MS = Service Manager; Customer: CT = Chief of Technical; C1 = Chief of 1; DD = Director of Design; DI = Director of Implementation; DO = Director of Operations; MDb = Design Manager; MDq = Design Manager; MDs = Design Manager; MOb = Manager of Operations; MOn = Manager of Operations; MOs = Manager of Operations)

In Figure 19, MA's contacts are removed. The simplified communication network shows the contacts of the service manager and the project manager. The service manager's contacts are chiefly with the "operations" organisation part of the customer, i.e., as contact with that part of the organisation is confirmed by the managers of the "operations" organisation and the service manager. The majority of the project manager's contacts are with the customer's "design" part of the organisation. His contacts with the "design" organisation are confirmed by the "design" managers and by the project manager.

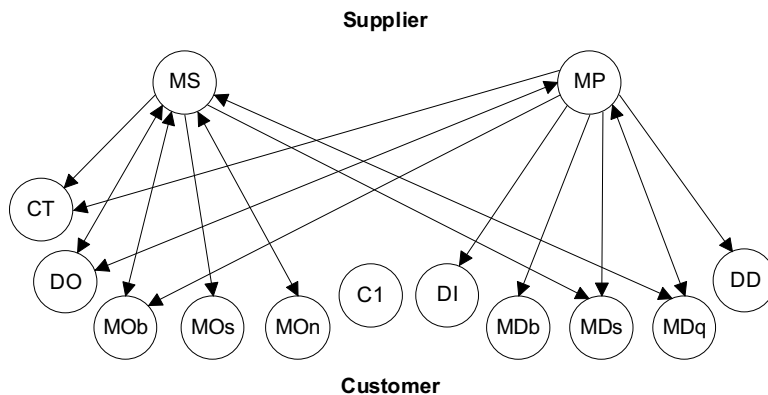


Figure 19. Simplified communication network of the supplier and customer Youth central persons

(Supplier: MP = Project Manager; MS = Service Manager; Customer: CT = Chief of Technical; C1 = Chief of 1; DD = Director of Design; DI = Director of Implementation; DO = Director of Operations; MDb = Design Manager; MDq = Design Manager; MDs = Design Manager; MOb = Manager of Operations; MOn = Manager of Operations; MOs = Manager of Operations)

It appears that the service manager's and the project manager's contacts have been established so that they support their respective working areas. The majority of the service manager's contacts are with the persons directly related to the care phase and the project manager has contacts with the persons that affect his project. The supplier's organisation had a limited number of contacts outside of the customer's technical personnel, for example with the customer's marketing. Only the supplier's account manager had contacts with the marketing as well. The large number of central persons in the customer organisation poses a challenge for the supplier, as the number of persons who are able to influence decisions is large. The service manager and project manager have, at least to a certain extent, developed a practical solution, whether agreed or not, to handle the customer contacts on their part. The communication with the supplier takes place more or less as the supplier would prefer. On the whole, the relationship between the supplier and customer Youth is seen as a very positive one.

The relationship between the customer and the supplier has been friendly and close. The relationship has been built over a long period of time. (Supplier)

It seemed that recently, the risk that the supplier would provide equipment to the competitor of customer Youth has damaged the current relationship. Customer Youth has been seen to take certain precautions as they prepare for the possible new situation. From the supplier's point of view, this has had a positive effect as the structure of the meetings has improved.

The relationship with the customer has formalised lately; there are fewer informal meetings, but at the same time the structure has improved. The reason for the reduced number of informal contacts is the risk that the supplier would deliver equipment to the customer's competitor. (Supplier)

The customer appreciates flexibility and good personal relations. (Supplier)

The service manager has not always been involved in the decision making. (Supplier)

6.3 Relation of the Care to Customer Satisfaction

Most of the supplier's persons were primarily involved with the care phase. There were also a limited number of few persons who were involved in general marketing, administration, and project related issues. In the customer organisation, three persons were working specifically in care phase related tasks, and two others were to some extent linked with the care phase, although the care phase was not their primary area of work. In the supplier's organisation, the involvement of three persons in care phase activities was somewhat limited. In Table 16, seven out of eight supplier persons found care more important than its relative share of sales indicates, while one marketing person judged care less important for customer satisfaction.

When the importance of care is evaluated, one can realise that if there were no care, sales would eventually start to decline. Care is seen as a main driver for the customer. (Supplier)

All the customer persons regarded the importance of the care phase as more important for total customer satisfaction than its relative share of sales to customer Youth indicates. Although care sales are proportionally less than the project and sales phases, their importance for customer satisfaction is more significant than the sales figures indicate in Case Youth. Typically, the interviewees estimated the care phase services to represent approximately 30 to 50 per cent of total customer satisfaction in the customer's opinion.

The customer believes that the majority of their customer satisfaction is determined in the care phase. (Customer)

The importance of care is rated highly, as the customer's capability to use equipment is totally dependent on the care phase. (Supplier)

The importance of care additionally depends on the product itself; the better the product, the less important the care phase becomes. (Customer)

Table 16. The importance of the care phase in Case Youth

	Care is relatively less important than its sales	Importance of care equals its sales	Care is relatively more important than its sales	Not available
Supplier (n = 8)	1	0	7	0
Customer (n = 5)	0	0	5	0

From the customer's point of view, the customer needs support throughout the network life cycle. Care phase is also seen as a way to build a sound and long lasting relationship with the customer. Services were seen as a way to differentiate from competition and to increase customer satisfaction. The supplier's current service portfolio was considered too fragmented from the customer's point of view. The customer highlighted the importance of the local support organisation for service provisioning. Local presence was judged to increase confidence in the supplier, but in the current relationship, the customer felt that the local organisation had distanced themselves too clearly from the supplier's product lines.

The supplier considered that, as the care phase services were the supplier's main direct interface with the customer, the importance of the care phase was therefore highlighted. Most of the customer's direct contacts with the supplier take place during the care phase. The supplier believed that problems during other phases than care phase may or may not be perceived by the customer, whereas during the care phase the problems are normally visible to the customer. The customer becomes irritated by the supplier's behaviour, which can be teacher like. Occasionally, the customer also gets the impression that the supplier is holding back information at the same time as the supplier is seen to extract information from the customer.

Care phase problems are seen as more complex. There are normally numerous solutions to a problem, but which is the most effective is difficult to judge. (Supplier)

In the future, the role of the care is predicted to grow even more. (Supplier)

6.4 Most Important Services

In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail. Percentages in Table 17 indicate the percentage of respondents who selected service as being among the most important services. In the case of customer Youth, Internet solutions and the service manager were not rated. Internet solutions were excluded from the study, as most people did not have experience of it. The service manager was not rated, but it was discussed with the interviewees. It should be remembered that only one interviewed in the customer organisation person was identified as a non-central person, therefore the results in the following chapters for Case Youth are relatively close to each other for the customer's central persons and for the customer's entire sample.

Table 17. Most important services in Case Youth

	Supplier (n = 8)	Customer (n = 5)	Supplier's central persons (n = 3)	Customer's central persons (n = 4)
Service A	100%	100%	100%	100%
Service B	50%	80%	67%	75%
Service C	38%	80%	33%	75%
Service D	25%	20%	33%	25%
Service G	13%	0%	0%	0%
Service H	13%	0%	0%	0%
Service E	0%	0%	0%	0%
Service F	0%	0%	0%	0%

Customer Youth considered that the most important service for them were service A, service B, and service C. The order is the same as for central persons as well as for the customer as a whole. Service D was also mentioned. The customer Youth identified no other service. The supplier's order of importance of services was the same; the most important service was considered service A followed by the service B. These two services were clearly the two most important, according to the supplier. Services C and D are then third and fourth, but the difference between them and the two most important services is already considerable. The customer and the supplier had a similar evaluation for service A. In the case of service B, the supplier as a whole judges this service less important than did the customer. The customer's and supplier's central persons' view of the importance of service B is the same. Regarding service C, the supplier does not evaluate the importance of the service as highly as the customer; the gap is 42 percentage units, both for the entire sample and central persons. Evaluations of service D show hardly any difference. The supplier also nominated two other services, services G and H, as the most important services, but these services were identified only by the supplier's non-central persons.

The central persons' opinions on the importance of the individual services are at least as close to each other as those of the supplier's and customer's entire samples. Nevertheless, the supplier's central persons and the supplier rank the most important services in the same order as the customer. In service C, which was ranked third in order of importance, the difference between the supplier's and the customer's opinion is over 25 percentage units.

6.5 Analysis of Customer Satisfaction and Loyalty with Respect to Services

The interviewees were asked about the customer's satisfaction and loyalty regarding services A, B, C, D, E, F, G, and H (Table 18). The comments in Figure 20 to Figure 27 are presented in the following chapters where services A, B, C, D, E, F, G, and H are discussed. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Table 18. Supplier's and customer's satisfaction and loyalty scores with respect to services in Case Youth

Service	Satisfaction	Loyalty	Satisfaction	Loyalty
Service A, entire sample	Supplier (n = 7)		Customer (n = 4)	
Mean	5.29	8.71	6.75	8.50
Standard deviation	2.14	0.95	1.55	1.29
Service A, central persons	Supplier (n = 3)		Customer (n = 3)	
Mean	4.33	8.67	6.50	8.67
Standard deviation	2.08	0.58	1.80	1.53
Service B, entire sample	Supplier (n = 8)		Customer (n = 5)	
Mean	6.81	8.13	8.20	8.00
Standard deviation	1.36	1.89	0.57	1.22
Service B, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	6.33	8.00	8.13	8.25
Standard deviation	2.08	1.00	0.63	1.26
Service C, entire sample	Supplier (n = 8)		Customer (n = 5)	
Mean	7.88	8.88	8.40	8.50
Standard deviation	0.95	0.64	0.55	1.12
Service C, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	7.67	9.33	8.25	8.50
Standard deviation	1.15	0.58	0.50	1.29
Service D, entire sample	Supplier (n = 8)		Customer (n = 5)	
Mean	5.50	6.69	7.30	7.80
Standard deviation	2.58	1.91	0.84	1.30
Service D, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	5.00	6.00	7.25	8.00
Standard deviation	3.00	2.65	0.96	1.41

Service E, entire sample		Supplier (n = 7)		Customer (n = 5)	
Mean		5.57	3.43	6.90	2.90
Standard deviation		2.30	2.57	1.34	1.14
Service E, central persons		Supplier (n = 3)		Customer (n = 4)	
Mean		6.00	6.00	6.63	2.75
Standard deviation		1.00	1.00	1.38	1.26
Service F, entire sample		Supplier (n = 8)		Customer (n = 5)	
Mean		6.13	2.06	7.40	2.80
Standard deviation		2.57	1.66	1.52	2.95
Service F, central persons		Supplier (n = 3)		Customer (n = 4)	
Mean		6.00	2.33	7.25	3.00
Standard deviation		3.61	1.15	1.71	3.37
Service G, entire sample		Supplier (n = 6)		Customer (n = 5)	
Mean		6.25	7.58	7.30	4.80
Standard deviation		1.41	1.02	1.30	2.49
Service G, central persons		Supplier (n = 2)		Customer (n = 4)	
Mean		6.00	8.50	7.13	5.25
Standard deviation		1.41	0.71	1.44	2.63
Service H, entire sample		Supplier (n = 7)		Customer (n = 5)	
Mean		4.79	8.14	3.50	7.30
Standard deviation		2.74	1.07	0.87	1.79
Service H, central persons		Supplier (n = 3)		Customer (n = 4)	
Mean		3.67	7.33	3.38	7.88
Standard deviation		1.53	0.58	0.95	1.44

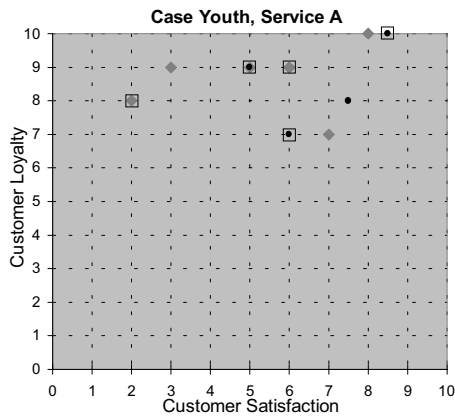


Figure 20. Customer satisfaction-loyalty matrix for service A



Figure 21. Customer satisfaction-loyalty matrix for service B

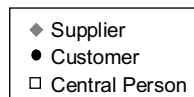




Figure 22. Customer satisfaction-loyalty matrix for service C



Figure 25. Customer satisfaction-loyalty matrix for service F



Figure 23. Customer satisfaction-loyalty matrix for service D



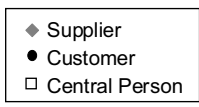
Figure 26. Customer satisfaction-loyalty matrix for service G



Figure 24. Customer satisfaction-loyalty matrix for service E



Figure 27. Customer satisfaction-loyalty matrix for service H



The supplier sees that there is a lack of consistency in certain of the services. The customer is regarded as price sensitive. Pricing is one of the key elements when purchasing services. The customer supplies more of the services themselves rather than purchasing them externally. The supplier has also noticed that, in value-added services, the customer has investigated other options. Currently, the customer is not satisfied with the supplier's capability of providing quick solutions. At the moment, it is considered too costly for the customer to change supplier completely.

It can be seen that there are some problems with the service definitions as services provided are not consistent. There is a need for more standardised services with modular design, by which services could be made available for the customer in time. There is a further need for more tailoring for the customer, but tailoring could be made in specific modules of the service. (Supplier)

Interviews revealed that the customer particularly appreciated the local content of the supplier's services. The customer is somewhat concerned that information might leak from the supplier to competing operators.

Currently, the customer sees that the telecommunications market as booming to such an extent that demand far exceeds supply. This has led to a situation whereby the customer does not have a great deal of choice. (Customer)

The customer thinks that, when they purchase a service, it is essentially captive; they do not feel prisoners as long as their customer satisfaction is high enough.

The customer feels that if the supplier forces loyalty, the purchaser will try to purchase services from other suppliers in order to introduce a punishment element with regard to the supplier. (Customer)

The customer purchases from the supplier those things where the supplier is good. The supplier is therefore selected as a supplier if the physical product is considered as good as the competition as the customer will then get good service. (Supplier)

6.5.1 Customer Satisfaction and Loyalty with Respect to Service A

In Table 18, when comparing customer and supplier, it came out that the customer's personnel (6.75) reported a higher level of satisfaction than the supplier's personnel (5.29) assumed they would. Regarding customer loyalty, the evaluations of the supplier's personnel (8.71) and customer's personnel (8.50) are similar. When comparing the supplier and its central persons, it came out that the supplier (5.29) reported a higher level of customer satisfaction than did the supplier's central persons (4.33). The supplier (8.71) and supplier's central persons (8.67) rated customer loyalty similarly, as did the customer (6.75, 8.50) and customer's central persons (6.50, 8.67). The supplier's central persons (4.33) gave considerably lower scores for satisfaction than did the customer's central persons (6.50). Customer loyalty was judged much the same by both groups (8.67 and 8.67).

Based on both the customer's and supplier's answers, and on Figure 20, service A is very likely to be a captive service. The lowest score for customer loyalty was seven. At the same time, customer satisfaction varies from 2 to 8.5. Based on these results, the customer is not particularly satisfied with the service, but knows that they need to buy the service.

When it comes to fault correction it can be seen that critical faults are corrected quickly, but the performance of the supplier has not been that good with fewer critical faults. (Supplier)

The current upgrades of service A are seen as dissatisfiers for the customer, as similar problems keep re-appearing and the supplier has had some problems that were not immediately reported to the customer. (Supplier)

The structure of the software is seen as rigid, and therefore it is difficult for the customer to customise it. The customer sees that they must be loyal with regard to service A as they use the supplier's equipment and there is no alternative. (Customer)

6.5.2 Customer Satisfaction and Loyalty with Respect to Service B

In Table 18, when comparing customer and supplier, it came out that the supplier (6.81) clearly reported a lower level of satisfaction than did the customer (8.20). As regards customer loyalty, the scores were similar (8.13 and 8.00). Both parties view that the customer would be relatively satisfied with the service. When comparing the supplier and its central persons, it came out that the supplier's central persons (6.33, 8.00) reported a lower level of customer satisfaction than did the supplier (6.81, 8.13) and similar scores for customer loyalty. When comparing the customer and its central persons, it came out that the customer's central persons (8.13, 8.25) reported a similar evaluation of customer satisfaction and a more positive evaluation of customer loyalty than did the customer (8.20, 8.00). As regards customer satisfaction, the supplier's central persons are the most negative. In Figure 21, individual scores have been plotted mainly to the top-right corner of the matrix, based on which it could be assumed that service B is chiefly a service that the customer is forced to purchase. One supplier's central person (4, 7) and non-central person (7, 4) reported the most critical viewpoints:

In service B, the customer requests feedback and statistics relating to the repairs. In one area, it has been reported that the faster turnaround times achieved by a competitor were the reason that the competitor was able to access the market. (Supplier)

Service B is considered a service the customer will purchase. (Supplier)

6.5.3 Customer Satisfaction and Loyalty with Respect to Service C

In Table 18, when comparing customer and supplier, it came out that the supplier (7.88) reported a lower level of customer satisfaction than the customer scored (8.40). As regards customer loyalty, the supplier's evaluation (8.88) is similar to the customer's perception (8.50). When comparing the supplier and its central persons, it came out that the supplier's central persons (7.67) generally reported almost the same score for the customer's satisfaction as the supplier (7.88) but for customer loyalty, the supplier's central persons (9.33) reported an even higher level of customer loyalty than did the supplier personnel (8.88). When comparing the customer's central persons and the supplier's central persons, it came out that the supplier's central persons (7.67) appear to be more pessimistic about the customer's satisfaction than the customer's central persons were (8.25). As regards customer loyalty, the supplier's central persons (9.33) reported higher scores than did the customer's central persons (8.50).

Figure 22 provides an interesting view; all of the plotted individual scores are in the far top-right corner of the matrix. The customer is satisfied with the service, on which both the customer and the supplier agree. The supplier's evaluations are a little more scattered than the customer's evaluations. Regarding customer loyalty, there seems to be a unanimous view inside the supplier's organisation, whereas the customer's views are a slightly more scattered, although based on the customer's replies, the customer is very likely to continue purchasing the service. In Figure 22, the supplier's non-central persons reported the lowest supplier scores (6.5, 9), (8, 8) and (8, 8). The lowest customer score was reported by a central person. Based on the plotted points, it could be assumed that service C is likely to be a service that the customer is forced to purchase.

Service C has worked well, as the customer has even publicly expressed gratitude for the service. (Supplier)

Service C is regarded as a critical service. It is a kind of an insurance that the customer purchases in case of problems. The importance of the service might diminish in the future. (Customer)

6.5.4 Customer Satisfaction and Loyalty with Respect to Service D

Service D, when comparing customer and supplier, is a service with which the supplier (5.50) reported a clearly lower level of customer satisfaction than the customer scores (7.30) in Table 18. The supplier (6.69) and the customer (7.80) scores for customer loyalty are closer to each other, but the supplier's scores are still lower than the customer scores. When comparing the supplier and its central persons, it came out that the central persons of the supplier (5.00, 6.00) reported a lower level of customer satisfaction and loyalty than did the supplier (5.50, 6.69). When comparing the customer and its central persons, it came out that the customer's central persons (7.25, 8.00) reported similar scores for satisfaction and a little higher for loyalty than did the customer (7.30, 7.80). When comparing the customer's central persons and the supplier's central persons, it came out that the customer's central persons (7.25, 8.00) rated satisfaction and loyalty considerably higher than did the supplier's central persons (5.00, 6.00). In each of the groups, customer loyalty received higher scores than customer satisfaction. Consequently, one can assume that service D is at least a slightly forced loyalty service.

The customer is highly competent, and feels that this point has not been properly taken account of. There is a need for tailoring in service D. The supplier's current perception is that the customer would change provider of service D if they could. (Supplier)

Service D is seen as a service whereby the customer purchases training as far as possible from outside, i.e., the customer actively tries to avoid purchasing training from the supplier. (Supplier)

The customer states that the technical content of service D has always been good, but there have been problems of co-ordination. (Customer)

6.5.5 Customer Satisfaction and Loyalty with Respect to Service E

In Table 18, when comparing customer and supplier, it came out that the supplier (5.57, 3.43) reported a lower level of customer satisfaction and a higher level of customer loyalty compared to the customer (6.90, 2.90). When comparing the supplier and its central persons, it came out that the supplier's central persons (6.00, 6.00) reported a more positive evaluation on the service than did the supplier (5.57, 3.43). When comparing the customer and its central persons, it came out that the customer (6.90, 2.90) and its central persons (6.63, 2.75) reported similar evaluations. As regards customer satisfaction, the central persons of the supplier (6.00) and the customer (6.90) are closer to each other than the supplier in general (5.57). As regards customer loyalty, the supplier's central persons (6.00) are very optimistic compared to the customer (2.90).

The means for customer satisfaction were the same as or higher than for customer loyalty in all groups. In Figure 24, the supplier's non-central person reported the most critical evaluation (1, 1). His opinion was that the supplier has no opportunity to sell the service to the customer. All the customers expected that their satisfaction would be from neutral to reasonably satisfied, but in each case, they saw only a small probability that they would purchase the service from the supplier. At the same time all except one supplier person estimated customer satisfaction to be approximately the same as the customer indicated, but they estimated the customer's likelihood of purchasing the service as much higher in several interviews. Based on the plotted points, the service is not at all captive in nature. Based on the comparison of means, service E may be a competitive service whereby the customer must be very satisfied in order to repurchase the service from the supplier again. How readily the customer changes the provider for the service is difficult to estimate based on this.

The customer sees itself technically capable and wishes to manage things themselves. (Supplier)

Customer feels that their own experts have the necessary education and are capable of learning, if required. In case the customer needs extra resources for service E, they feel that they would have access to cheaper resources via their owners. (Customer)

6.5.6 Customer Satisfaction and Loyalty with Respect to Service F

In service F (Table 18), when comparing customer and supplier, it came out that the supplier (6.13, 2.06) reported a lower level of customer satisfaction and customer loyalty than did the customer (7.40, 2.80). When comparing the supplier and its central persons, it came out that the supplier (6.13) reported similar scores for customer satisfaction to the central persons of the supplier (6.00). The supplier's central persons reported slightly higher scores for customer loyalty (2.33) than did the supplier (2.06). Customer loyalty was rated low by both groups. When comparing the customer and its central persons, it came out that the customer reported (7.40, 2.80) slightly higher scores for customer satisfaction compared to the customer's central persons (7.25, 3.00) and slightly lower scores for customer loyalty. The supplier's central persons (6.00, 2.33) reported a lower level of customer satisfaction and loyalty than the customer's central persons (7.25, 3.00). Customer loyalty in each group was clearly lower than the reported scores for customer satisfaction. Thus, service F may be a competitive service and the customer has a wide variety of choices regarding the service.

In Figure 25, the most critical evaluations (2, 1) and (3, 1) were reported by the supplier. A central person reported the most critical evaluation and a supplier's non-central person reported the other one. It is interesting to notice that the spread of customer satisfaction is from 2 to 9. In all except two cases, customer loyalty received extremely low scores regardless of the reported customer satisfaction scores. The most optimistic customer loyalty scores were reported by a customer's central person (7, 8) and by a supplier's non-central person (6.5, 5.5). Those two given points clearly differ from the rest of the people; the other scores are located in the bottom half of the matrix. The service is competitive in nature (Figure 25) and it is likely that the customer satisfaction-loyalty curve would be competitive in its shape, i.e., customer loyalty remains low until customer satisfaction receives high scores.

Service F could be utilised by the customer only to compensate for their lack of resources. (Supplier) and (Customer)

Service F is a service that the customer needs initially; once the customer has gained the necessary expertise, they will not purchase the service. (Customer)

Service F is considered an expensive service compared to local companies. The customer feels that it is cheaper for them to hire a local person from the market than to purchase the service from the supplier. However, when the service is considered, the customer sees that the supplier performs quality work.

6.5.7 Customer Satisfaction and Loyalty with Respect to Service G

Service G was not rated in other cases, except in Case Birth. In Table 18, service G received a somewhat different kind of response from the supplier and the customer. When comparing customer and supplier, it came out that the supplier (6.25) reported a lower level of customer satisfaction than did the customer (7.30). As regards customer loyalty, the customer reported (4.80) considerably lower figures than the supplier reported (7.58). When comparing the supplier and its central persons, it came out that the central persons of the supplier (6.00, 8.50) and the supplier (6.25, 7.58) reported somewhat similar evaluations of customer satisfaction, but the central persons reported higher scores for customer loyalty. When comparing the customer and its central persons, it came out that the customer's central persons (7.13) reported slightly lower customer satisfaction than did the customer (7.30), and the central persons (5.25) reported higher customer loyalty than did the customer (4.80). The supplier's central persons (6.00, 8.50) reported a lower level of customer satisfaction and a considerably higher level of customer loyalty than did the customer's central persons (7.13, 5.25).

There is a difference of opinion between the customer and the supplier; the supplier thinks that the customer is likely to purchase the service and the customer feels that they have more choices with the service. Based on the customer's loyalty scores, the service could be considered an unlikely purchase by the customer. The plotted points of the supplier are located in the upper part of the matrix in Figure 26, and the data relating to the customer are plotted in the lower part of the matrix. Based on the data, it is difficult to draw conclusions on the customer satisfaction-loyalty curve. The customer's central person reported the most positive customer evaluation (8, 9) in Figure 26. This person stated that he had high expectations for the service and that the customer saw that the supplier would be interested in providing the service, which suggests that the customer person really would be interested in the service.

Service G is a service that is unlikely to be purchased by the customer. (Customer)

6.5.8 Customer Satisfaction and Loyalty with Respect to Service H

Service H was not rated in other cases. It can be judged to be a subcategory of service A, to which it can be closely related. As regards customer satisfaction and customer loyalty, there is a considerable difference. In Table 18, when comparing customer and supplier, it came out that the supplier (4.79, 8.14) reported a higher level of customer satisfaction and customer loyalty than did the customer (3.50, 7.30). When comparing the supplier and its central persons, it came out that the supplier's central persons (3.67, 7.33) reported a lower level of customer satisfaction and loyalty than did the supplier (4.79, 8.14). When comparing the customer and its central persons, it came out that the customer's central persons (3.38, 7.88) reported similar customer satisfaction to the customer personnel (3.50, 7.30), and the customer's central persons reported a higher level of customer loyalty. The central persons' evaluations are closer to each other than are the opinions of the customer and the supplier. As regards customer satisfaction, the supplier's central persons are slightly more optimistic, but regarding customer loyalty, the supplier's central persons are more pessimistic about supplier's chances of re-selling the service compared to the customer's central persons.

The mean of customer loyalty in each group is clearly higher than that of customer satisfaction. In all groups, the customer is considered to be dissatisfied, but quite likely to repurchase the service in the future. The customer seems to be dissatisfied with the service, but the customer can be assumed to be loyal and continue to purchase the service in the future, despite their dissatisfaction. The service is interpreted as very captivating and the shape of the customer satisfaction-loyalty curve would be of a forced-to-buy type. All of the observation points are located in the upper part of the matrix (Figure 27). There is one point in the extreme top-right corner, which (10, 10) was reported by a supplier's non-central person, who saw that the problems related to the service had been solved by now. This (10, 10) was the only maximum score reported in Case Youth. The supplier's central person (2, 7) reported the most negative supplier score in Figure 27. He saw that there had been continuous problems, but that the customer would be satisfied with local support. The two more critical customer evaluations of the service, (4, 5) and (4, 6), were reported by the customer's non-central person and by a central person. The non-central person saw the service as the supplier's weakest service and said there were difficulties in getting work done. For the central person, the third party manufacturer was seen as a problematic area. It is reasonable to suggest that the service itself would be captive, as all of the plotted points could be fitted to a curve of a captive shape.

Service H has had continuous problems. (Supplier)

The customer is dissatisfied about the product and its support from the manufacturer. But the customer sees that the supplier's role as a middleman improves the situation. (Supplier)

6.6 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager

In interviews, there was discussion about the service manager and the service manager concept, but no questions were asked about customer satisfaction and customer loyalty with regard to the service manager. The value added of the service manager was considered to be in the co-ordination of the work, receiving direct feedback from the customer, and channelling that information further to appropriate parties in the supplier company. The service manager has a role in linking local operations and product lines working seamlessly together to prevent the customer from detecting possible information cut-offs.

The service manager realises that he must rely to a great extent on his own contacts in order to get his job done. Most of the time is spent dealing with operational issues. The co-operation with the research and development functions could be improved. The customer appreciates the service manager as they perceive a degree of ownership for issues whereas they did not see a responsible person in the supplier organisation prior to the introduction of the concept. The service manager is seen as a person to contact if things go wrong or when special attention is needed. The customer would like to be more involved with the supplier in the joint planning of care phase issues.

The service manager's added value is his role as a dedicated person who is responsible for the care phase towards the customer. The service manager is in a business driving position and the business can be extended by his actions. (Supplier)

The added value by the service manager is seen particularly with larger issues, when the service manager is a good contact point. (Customer)

The added value of the service manager is the better involvement of the customer in the care phase. Consequently, customer has a feeling of a true partnership between the customer and the supplier. (Customer)

6.7 Customer Compass

Chapter 4.7.7 (Customer Compass) explains in detail how the grading of customer compass was carried out. The customer and the supplier, on average, seem to be relatively close to each other (Figure 28) in their opinions about their relationship. The service manager has a slightly different view of customer portfolio management and the value-added role. The total number of respondents was seven supplier persons and five customer persons.

As regards **customer portfolio management**, the supplier's (3.71) score is very close to the customer's view (4.00). Both view that the customer portfolio management as a combination of individual and group portfolios. In the interviews, local support was identified as an advantage of a portfolio, whereas products took the scores more towards group and market. The service manager (5.00) sees that the customer portfolio is managed on a purely individual basis.

The current customer portfolio is considered individual, so the customer feels that it is treated as a valuable customer. (Customer)

In terms of **value proposition design**, the customer (2.40) and supplier (2.14) are again quite close to each other. The supplier considers that the value proposition falls between the supplier's core product and an extended offer. The customer sees the situation much the same, but is slightly more biased towards an extended offer. The service manager (2.00) sees the offering as more limited, and views the situation as a combination of a core product and an extended offer.

The value proposition by the supplier is considered as something between a core product and an extended offer. New products are perceived more clearly as belonging into the extended offer category. (Customer)

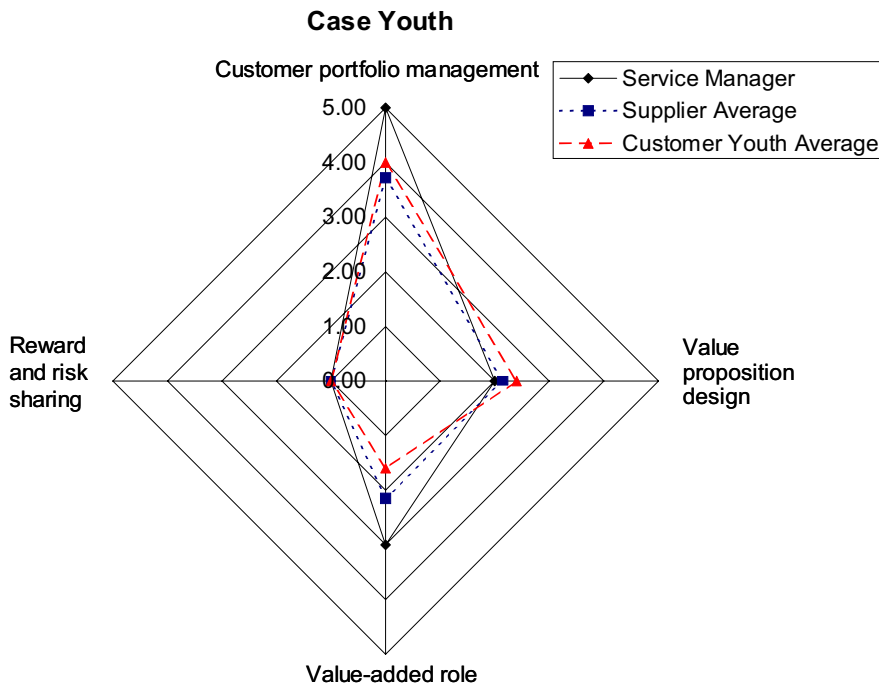


Figure 28. Customer compass of customer Youth

As regards the **value-added role**, the customer (1.60) sees the role of the supplier as the least significant; the role of the supplier is seen as slightly more than a pure product manager. The supplier (2.14) considers that its role should be closer to a process manager, but not quite there yet. In conclusion, the approach can be seen as a combination of a product manager and process manager. Finally, the service manager (3.00) feels that the supplier adopts the approach of a process manager.

The global software concept is seen to prevent dealing with the customer in terms of the customer's needs. (Supplier)

As regards **reward and risk sharing**, the customer (1.00), supplier (1.00) and service manager (1.00) are unanimous in their view on the issue – the relationship is based on the market based pricing.

The customer is considered a relatively easy customer, as they are reasonable. The customer also informs the supplier if a serious issue is identified by the customer. (Supplier)

6.8 Summary

Customer Youth's network had been in commercial use for approximately four years. The supplier-customer communication network was wide and the number of personal contacts of those person who were in contacts, was very high. The service manager and project manager had both restricted their contacts with the customer organisation to those persons that are vital for their own areas of responsibility. The supplier's service manager, account manager, and project manager were the main interfaces with the customer

Care phase was regarded as the factor that drives customer satisfaction. The importance of the care phase was predicted to grow even further in the future. The customer and the supplier have a

somewhat similar view on the relative importance of individual services. Both the customer and the supplier considered service A the most important service. Other services that were clearly identified as important by the supplier and the customer were services B, C, and D. The customer's and supplier's perceptions about individual services were relatively close, although there were some differences but there were no major differences. The supplier had a more negative perception of the supplier's services than did the customer. In particular, in the interviews the customer and the supplier highlighted the importance of local personnel. The service manager was considered to add value to the customer.

7 CASE CHILD

7.1 Background and Position of Company Child in the Market Area

Customer Child and the supplier had approximately a four year relationship since the building of the network started. The business negotiations for the contract had already started earlier. The current mobile network has been in commercial use for approximately three years. The supplier has been the sole provider of the particular technology. The customer has experience of how other suppliers manage their projects and care phase. The supplier delivers equipment to the competitors of customer Child in its market area. Customer Child was somewhat concerned in the interviews about its importance for the supplier in the market area. Currently, customer Child is shifting more to the operation of the network. The operation of the network can be interpreted as the main focus of customer Child, although there are issues in the project phase that require the customer's focus as well. The network is still been built, but the focus of the customer is directed towards meeting the needs of capacity and quality, as the network covers required geographical areas. The number of subscribers is still rapidly growing and the competition is becoming even stiffer with new operators entering the market.

Four customer persons and nine supplier persons were interviewed. All of the interviewees additionally provided quantitative evaluations regarding the services. In the supplier organisation, several nationalities were represented. Three customer persons were natives and one was expatriate. The number of services studied was six. The interviews were carried out between May and June in 1999.

7.2 Customer Contacts and Relationships

All the supplier persons ($n = 9$) and all the customer persons ($n = 3$), except one, reported their contacts within their own organisation and with the supplier. The reason for the one customer person not describing his contacts was his tight schedule. Interviewees reported that they interacted with 32 different people in the care phase: 20 supplier persons and 12 customer persons were identified as the other parties in the communication.

7.2.1 Contacts within the Supplier Company

Among the supplier's personnel, four persons had more contacts than anybody else and they were selected as the supplier's central persons. represents the number of contacts that other interviewees reported having with them. In addition, shows as a percentage the number of contacts that the first person to be omitted as a non-central person received. For a comprehensive explanation on the abbreviations of the central persons, see Appendix 3.

In Case Child, the service manager, project manager, and account manager were recognised as high activity interactors. The fourth central person, a manager in the local service organisation, was seen to be medium in his activity of interaction. The first non-central person had less than half of the fourth person's contacts.

Table 19. Selection of supplier's central persons⁸

Persons with whom interviewees have reported contacts	MS	MP	MA	MC	First non-central person
	No. of supplier contacts	6	6	6	
No. of customer contacts	3	3	3	2	
Contacts/Max. Contacts	9/10	9/10	9/11	6/10	3/11
Relative Degree of Contacts	90%	90%	82%	60%	27%
Activity of Interaction	High	High	High	Med.	Low

(MA = Account Manager; MC = Customer Service Centre Manager; MP = Project Manager; MS = Service Manager)

All central persons reported communicating with each other. This is represented in Figure 71, in Appendix 4. The account manager was not available for interview in Case Child. The central persons regularly interact with each other. The number of supplier persons' internal contacts with other people in the supplier's internal organisation was fairly limited. It seems that there could be certain limitations in the way that information is shared within the supplier's organisation, when the interaction outside of the central persons is observed.

The product manager interfaced with the service manager only if there was a crisis situation. (Supplier)

7.2.2 Contacts within Customer Company Child

The customer interviewees belonged to the engineering part of the customer organisation. That part of the customer organisation was thought by the supplier to be the key for the supplier.

The customer is driven by their engineering, as the buyers and buying decisions are made in the engineering department. (Supplier)

In the customer organisation, the division into central persons and non-central persons was not very distinct. In, it appears that there have been many contacts between the supplier and the customer. However, internally, the customer people appear to have far fewer contacts, based on the comments made by the customer's personnel. The difference between the last individual selected as a central person and the first non-central person was just one nominated contact less. Therefore, all the interviewed customer persons were selected as central persons. For a complete explanation of the abbreviations of the central persons, see Appendix 3.

⁸ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

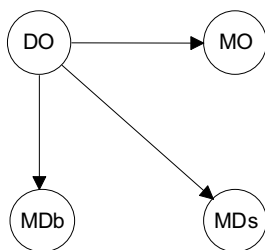
Table 20. Selection of customer's central persons⁹

Persons with whom interviewees have reported contacts	MDs	Mdb	MO	DO	First non-central person
	No. of supplier contacts	6	6	4	3
No. of customer contacts	1	1	1	0	
Contacts/Max. Contacts	7/8	7/9	5/8	3/8	4/9
Relative Degree of Contacts	88%	78%	63%	38%	44%
Activity of Interaction	High	High	Med.	Low	Low

(DO = Director of Operations; Mdb = Design Manager; MDs = Design Manager; MO = Manager of Operations)

Both of the managers involved in the design of the customer's mobile network were identified as high activity interactors. The activity of the third manager was judged medium level and the fourth person selected was a director. Customer Child's internal communication network in Figure 29 shows that the central persons' communication was mainly from the director to his subordinates. In practice, it would appear that the director is likely to be a very important person, as shown in Table 20. One of the managers did not discuss his contacts and the two other managers, reported contacts that they had only with their own departments.

The limiting factor with the customer interviews was the limited number of customer personnel that could be interviewed. Thus, it would be important to have solid grounds for excluding personnel from the customer's central person group. This would have a strong effect on the numbers as a relatively high percentage of people would be excluded. With a larger number of interviews, more thorough conclusions about the position of the director and the criticality of his interaction could be drawn.

**Figure 29. Communication network of customer Child's central persons¹⁰**

(DO = Director of Operations; Mdb = Design Manager; MDs = Design Manager; MO = Manager of Operations)

⁹ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

¹⁰ Figure 29 is derived from the Table 20, as the persons selected as central persons in Table 20 were selected and their contacts with each other were drawn to Figure 29, as they had reported in the interviews.

7.2.3 Interaction between Supplier and Customer Child

The communication network illustrates the communication between the supplier and the customer. The service manager interacted with all the customer's central persons. Indeed, all the supplier and customer persons (Figure 30) communicated with each other. Only one supplier-customer interface was left unrevealed, as these two persons (the supplier's account manager and the customer's design manager) were not interviewed about their contacts. The customer service centre manager is nevertheless in more frequent contacts with the highest-level interviewed customer person, according to the customer. If we compare the communication network among the account manager, project manager, and service manager, one can notice that they all have more or less the same contacts. The project manager's and service manager's contacts are equally frequent when judged by the customer. The account manager contacts, in the customer's view, could be somewhat more frequent when compared to those two.

It is interesting to remark, based on the interviews, that the supplier's organisation has a very limited number of contacts outside of the customer's operation and maintenance organisation. The contacts, for example, with the customer's marketing people or finance and control people are almost non-existent. Quite a considerable number of supplier persons who were considered non-central persons admitted that their contacts with the customer were rather limited. Therefore, it is reasonable to believe that these persons played a lesser role in the customer interface that could still, however, be significant, than those persons who were frequently named by several parties.

The customer believed that their contacts were sufficient, but considered it unfortunate that the supplier attempted to limit the customer's contacts with different layers of the supplier organisation. (Customer)

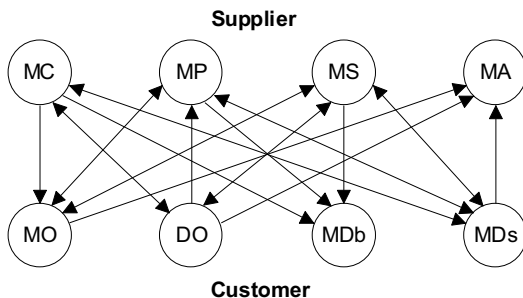


Figure 30. Communication network of the supplier and customer Child central persons

(Supplier: MA = Account Manager; MC = Customer Service Centre Manager; MP = Project Manager; MS = Service Manager; Customer: DO = Director of Operations; MDb = Design Manager; MDs = Design Manager; MO = Manager of Operations)

As differences, for example between project manager's and service manager's contact base, could not be detected, one can assume that their customer contacts deal with both project and care phase issues. As the same persons seem to interface with the supplier from the customer side, this could lead to conflicting situations, as the division between different tasks in the supplier organisation might not work in all situations. It appears that the account manager has as wide a contact base in the care phase as does the service manager, and the extent of the account manager's contacts would be at least as broad as that of the service manager. The interfaces between the customer and the supplier were established, but occasionally matters seem to be escalated in the supplier's organisation to the higher levels of the supplier's organisation, which is not ideal from the supplier's point of view. It could be interpreted that this escalation may occasionally cut the "wires" of the central persons.

The supplier was in contact with the customer mainly in various meetings. (Supplier)

The customer thinks that normal daily issues could be resolved at the level of project manager, service manager, and account manager, but serious problems need to be discussed at a higher level within the organisation. (Customer)

It appeared that the customer and the supplier were suspicious of each other and that they could not entirely trust each other. The supplier seems doubtful whether there could develop a relationship whereby both parties could share business processes openly. Furthermore, it would be yet more complicated to develop the relationship even further to a true partnership, which would enable the elimination of overlapping functions in both organisations, i.e., the supplier would become an extension of the customer's organisation. The supplier considers the customer conservative, as they fear that the supplier might leak confidential information about them to their competitors.

The customer has learnt how to live with the supplier. (Supplier)

7.3 Relation of the Care to Customer Satisfaction

In the customer organisation, all interviewees worked directly with the care phase. The exceptions in the supplier's organisation were administrative, marketing, and sales people, who are also involved phases other than the care phase. They numbered four of the total nine supplier persons.

Table 21. The importance of the care phase in Case Child

	Care is relatively less important than its sales	Importance of care equals its sales	Care is relatively more important than its sales	Not available
Supplier (n = 9)	1	0	3	5
Customer (n = 4)	0	0	3	1

Table 21 shows that both the supplier's and customer's personnel regarded the care phase as more important for the customer's total satisfaction than suggested by its share of the supplier's sales. Five supplier persons out of nine were not asked about the impact of care on customer satisfaction. One of the interviewees regarded care as less important for customer satisfaction than suggested by its share of the supplier's sales. Among the customer one person was not asked about his opinion. Three customer persons considered the importance of the care phase as more important than is its share of the supplier's sales towards customer Child. Three supplier persons considered care as more important, whereas one supplier person considered care as less important.

It is very difficult to change customer behaviour. (Supplier)

The customer was considered very dependent on the supplier. (Supplier)

The issues related to the care phase are handled in the meetings where project related issues are handled as well. It is quite obvious that the care phase has not achieved the status of an independent area, but is considered part of the project phase.

The main meetings for the care phase are project review meetings. (Customer)

It was speculated in the interviews whether it could be a cultural issue that the customer seems to be somewhat reluctant to give positive feedback to the supplier, or whether it was simply a matter of tactics towards the supplier. In any case, the supplier considered the customer reluctant to express how they felt about the services provided by the supplier. Internally, certain of the supplier's persons and customer persons were not very well informed about the nature of care and care phase.

The customer does not demonstrate to their supplier that they would be satisfied with the service they are provided with. (Supplier)

Care phase is seen to start too late; it starts only after the sales are completed to the customer. (Supplier)

The customer believed that their customer satisfaction consisted only partly of services. Care services are part of the entire picture. The customer emphasised that, as the customer continuously improves its own performance, the supplier needs to develop as well. Customer satisfaction is one of the factors that drive the customer when they make decisions about suppliers.

The care phase drives the customer's actions. Care's indirect impact on the account is far greater than its direct impact. If the customer were dissatisfied with the care, the customer would not only stop buying the care phase services, but the customer would go to another vendor. (Customer)

7.4 Most Important Services

In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail. Percentages in Table 22 indicate the percentage of respondents who selected service as being among the most important services. In the case of customer Child, Internet solutions and the service manager were not rated. No questions were asked about Internet solutions, as the service was so new that most people would not have had experience of it. While the service manager was not rated, it was discussed with the interviewees.

Table 22. Most important services in Case Child

	Supplier (n = 9)	Customer (n = 4)	Supplier's central persons (n = 3)	Customer's central persons (n = 4)
Service A	67%	100%	100%	100%
Service C	78%	75%	100%	75%
Service B	22%	50%	33%	50%
Service E	22%	0%	0%	0%
Service F	22%	0%	0%	0%
Service D	0%	0%	0%	0%

In Case Child, the customer and customer central persons were the same people. In Case Child, the values are shown for both the customer and the customer's central persons, although they are the same, in order to help the reader with the cross-case analysis. The number of interviewees among customer Child was only four persons. This could be considered a limiting factor when the most important services for the customer are considered.

The customer's evaluation of the importance of the services is clear. The customer considers that the most important service for them is service A, followed by service C and then service B. The customer did not consider the other services important. The most important service for the customer can be characterised by one of the answers:

The three most important services are service A, service A, and service A. (Customer)

When the supplier's order of importance is compared, certain differences can be seen. According to the supplier, service C is ranked number one, followed by service A. In equal third position are service B, service E, and service F. None of the customer persons cited services E or F among the most important services. There is a large gap between the customer's and the supplier's evaluation of service A. Another gap is evident in the evaluations of service B. The order and the importance to the customer of the various services is generally not realised by the supplier.

The evaluations of the central persons reveal that there is a closer match between these two. The supplier's central persons reveal the same order as the customer's personnel for the most important services. Only in service A is there a difference between the supplier's and the customer's opinion of over 25 percentage units, which is used in the present study as revealing of larger differences between the supplier's and customer's evaluations. However, only three of the supplier's central persons supplied an evaluation of the most important services. In practice, this means that a difference of one rating represents a difference of 33 percentage units.

7.5 Analysis of Customer Satisfaction and Loyalty with Respect to Services

The interviewees were asked about customer satisfaction and loyalty with respect to services A, B, C, D, E, and F (Table 23). As the data in service F were limited, the means and standard deviations for the service are not presented here. Comments on Figure 31 to Figure 35 are presented in the following chapters where services A to E are discussed. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Table 23. Supplier's and customer's satisfaction and loyalty scores with respect to services in Case Child

Service	Satisfaction	Loyalty	Satisfaction	Loyalty
Service A, entire sample	Supplier (n = 9)		Customer (n = 4)	
Mean	5.89	8.72	7.25	6.00
Standard deviation	1.78	0.67	1.19	3.72
Service A, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	6.67	9.33	7.25	6.00
Standard deviation	1.53	0.76	1.19	3.72
Service B, entire sample	Supplier (n = 7)		Customer (n = 3)	
Mean	7.00	7.64	8.67	6.33
Standard deviation	2.96	3.31	1.04	1.53
Service B, central persons	Supplier (n = 3)		Customer (n = 3)	
Mean	8.33	9.67	8.67	6.33
Standard deviation	1.15	0.29	1.04	1.53
Service C, entire sample	Supplier (n = 8)		Customer (n = 4)	
Mean	6.44	8.94	4.38	4.63
Standard deviation	1.35	0.86	2.10	4.50
Service C, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	6.67	9.33	4.38	4.63
Standard deviation	0.76	0.50	2.10	4.50
Service D, entire sample	Supplier (n = 5)		Customer (n = 4)	
Mean	5.30	6.20	5.13	3.38
Standard deviation	1.82	1.44	1.65	2.66
Service D, central persons	Supplier (n = 3)		Customer (n = 4)	
Mean	4.50	6.83	5.13	3.38
Standard deviation	1.80	1.61	1.65	2.66
Service E, entire sample	Supplier (n = 6)		Customer (n = 3)	
Mean	6.83	5.25	6.33	5.17
Standard deviation	1.25	2.48	4.37	4.07
Service E, central persons	Supplier (n = 2)		Customer (n = 3)	
Mean	8.00	4.25	6.33	5.17
Standard deviation	0.71	1.77	4.37	4.07



Figure 31. Customer satisfaction-loyalty matrix for service A



Figure 34. Customer satisfaction-loyalty matrix for service D



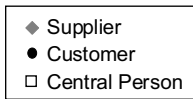
Figure 32. Customer satisfaction-loyalty matrix for service B



Figure 35. Customer satisfaction-loyalty matrix for service E



Figure 33. Customer satisfaction-loyalty matrix for service C



The customer recognised that their expectations are constantly becoming higher and expressed their dissatisfaction with the fact that after they have signed a care agreement, they are forced to purchase the services and that their loyalty is thus forced. The customer was acutely aware of those services where their loyalty was forced. The supplier realised that price was not the only factor affecting the customer's buying behaviour.

In certain of the services, the customer commented that the way of eliciting loyalty was not correct as with certain of the services, the customer had no choice, but was effectively forced to purchase them. (Customer)

The customer saw that services referred to as value-added services were quite tempting. However, the customer lacked concrete measures for evaluating the services, and considered it somewhat problematic that the services are intangible and therefore, the added value is often intangible. (Customer)

The supplier believed that certain of the customer persons did not necessarily know what they had purchased. The interviews revealed that some of the interviewees did not know what certain services consisted of. Nevertheless, the service manager pointed out the price sensitivity of customer Child.

The customer is aware of the market prices and any overpricing is a risk that could ruin the relationship between the supplier and customer. (Supplier)

7.5.1 Customer Satisfaction and Loyalty with Respect to Service A

When comparing customer and supplier, it came out that the customer's personnel (7.25) reported a higher level of customer satisfaction than was assumed by the supplier's personnel (5.89) (Table 23). At the same time, the supplier's personnel (8.72) reported high customer loyalty, but the customer indicated otherwise, (6.00) clearly reporting a lower level of customer loyalty. Based on both the customer's and supplier's answers, and particularly on Figure 31, service A is likely to be a captive service. When comparing the supplier and its central persons, it came out that the supplier's central persons (6.67, 9.33) reported higher customer satisfaction and loyalty than did the supplier (5.89, 8.72). The central persons' satisfaction score is closer to the customer's perception than that of the supplier persons. The central persons' score for loyalty differs more from the customer's perception. When comparing the customer and the supplier's central persons, it came out that the supplier's central persons reported a lower level of customer satisfaction than did the customer.

The critical customer person reported (8, 0.5). This person gave a reasonably high customer satisfaction (8) score, but a very low customer loyalty (0.5) score. Even without this critical score, it can be seen from Figure 31 that the customer supplied more critical customer loyalty scores than did the supplier. This person commented that there cannot be true loyalty if loyalty is forced and if service A is a mandatory service for customer Child. The customer's mean for loyalty would have been 7.83 without this score. In practice, removing this individual's data would not change the results. The lowest supplier scores (4, 8) and (3.5, 8.5) were reported by the supplier's non-central persons. The plotted points would create almost a horizontal line (Figure 31). It is also worth noting that the supplier's evaluation of customer satisfaction varies between 3.5 and 8.5. The spread can be said to be reasonably even, which suggests that there are many views on the customer's satisfaction with this service within the supplier's organisation. The service is interpreted to be one characterised by forced loyalty.

The customer needs service A, as without the service the customer would not be able to serve their end-users. (Supplier)

7.5.2 Customer Satisfaction and Loyalty with Respect to Service B

When comparing customer and supplier, it came out that the supplier (7.00) reported lower scores for customer satisfaction than did the customer (8.67) (Table 23). However, for customer loyalty, the supplier reported (7.64) higher scores than did the customer (6.33). In this service, as with service A, one can see that the customer's satisfaction figures were higher than the customer loyalty figures. When comparing the supplier and its central persons, it came out that the supplier's central persons (8.33, 9.67) reported a far more optimistic evaluation of the service than did the supplier (7.00, 7.64). The supplier's central persons are closer to the customer's perception of customer satisfaction than the supplier personnel, but the supplier's central persons are very optimistic as regards customer loyalty. The central persons of the supplier consider it practically guaranteed that the customer will purchase the service from the supplier but the customer is far more critical.

Customer loyalty receives higher scores than customer satisfaction from the supplier, but the customer sees the situation in the opposite way. From the supplier's scores, this could be assumed to indicate that the service is a service that the customer is forced to buy. Based on the customer's scores, one might think the opposite, but based on the customer comments, the service was characterised by them rather as a "must buy" service. The supplier's central persons considered the customer very likely to purchase the service from the supplier in the future.

Service B is considered a service that the customer needs to purchase. (Customer)

The individual scores have been plotted to the top-right corner of Figure 32. The customer seems to be relatively satisfied with the service but, as regards loyalty to the service, the customer can be seen as more critical than the supplier. The customer additionally commented, with respect to service B, that it is a service the customer must purchase if they purchase a network from the supplier.

7.5.3 Customer Satisfaction and Loyalty with Respect to Service C

From Figure 33 and Table 23, it is difficult to see that the customer and the supplier would have discussed the same service. When comparing customer and supplier, it came out that both the customer satisfaction and the customer loyalty reported by the supplier (6.44, 8.94) were considerably higher than the scores reported by the customer (4.38, 4.63). When comparing the supplier and its central persons, it came out that the supplier's central persons (6.67, 9.33) consider the service even better than does the supplier (6.44, 8.94), although the differences can be considered moderate.

In Figure 33, one can see that two of the customer's central persons have reported highly critical scores. Those scores were (1.5, 1) and (4.5, 0.5). Moreover, one of them reported the most critical customer loyalty score for service A. The other one who reported critical scores made comments describing the service as a very important service for the customer. The person stated at the same time that there had been problems with the service that still existed. In practice, the customer had previously been disappointed with the service several times. Therefore, it would be unfair to exclude these two critical scores, as there is clear justification for their opinions. The supplier's central person reported the lowest supplier score for customer satisfaction and a non-central person reported the lowest customer loyalty score. Based on the individual plotted points in Figure 33 made by the supplier, service C could be considered a captive service, except point (4.5, 0.5), which does not fit well with this type of curve. For all means, loyalty receives higher scores than customer satisfaction. This indicates that this service is a service that the customer is forced to buy. The current customer satisfaction with this service is low and feedback based on the interviews is also quite alarming.

Service C is a critical service. The customer needs service C; they do not have any option. (Customer)

7.5.4 Customer Satisfaction and Loyalty with Respect to Service D

When comparing customer and supplier, it came out that the customer (5.13) and the supplier scores (5.30) for customer satisfaction are quite close together in Table 23. However, as regards customer loyalty, there is a clear difference between the two; the supplier (6.20) thinks that the customer is even more loyal than they are satisfied, whereas the customer (3.38) thinks differently. When comparing the supplier and its central persons, it came out that the supplier (5.30, 6.20) and the supplier's central persons (4.50, 6.83) evaluations differ slightly from each other. The supplier's central persons (4.50, 6.83) reported lower satisfaction scores and clearly higher loyalty scores than did the customer (5.13, 3.38).

In Figure 34, all the points are scattered over the matrix. It would therefore be difficult to draw any conclusions regarding the possible form of customer satisfaction-loyalty curve. The same person who reported more critical scores for customer loyalty throughout reported the more critical customer scores (5.5, 0.5) regarding service D. The supplier's central person reported the most critical evaluation for customer satisfaction (2.5). As regards loyalty, all but one customer score were below the supplier's evaluations. The interviews support this in that the customer seems to believe that they would have more choice if they only searched for alternatives.

The customer has complained that some of the new services in service D are made available to the customer too late and that service D is considered to lag behind the infrastructure development. (Customer)

The customer has bought some of service D from other suppliers. This is a disadvantage for the supplier as there are things that can be supplier specific, and as the customer learns things from another supplier, using their supplier's equipment and definitions can be unpleasant and awkward. (Customer)

The customer needs to purchase the basic service D. But for the management level, alternatives are available. (Customer)

7.5.5 Customer Satisfaction and Loyalty with Respect to Service E

In service E, when comparing customer and supplier, it came out that the customer's (6.33, 5.17) and the supplier's (6.83, 5.25) means were alike in Table 23. When comparing the supplier and its central persons, it came out that the supplier's central persons (8.00) reported clearly a higher level of customer satisfaction than the rest of the supplier persons (6.83) did. At the same time, the supplier's central persons (4.25) reported a lower level of customer loyalty than the supplier did (5.25). A comparison of the supplier's central persons and the customer shows that the supplier reported clearly higher level of customer satisfaction than the customer did and regarding customer loyalty, the central persons recorded a lower scores than the customer. In each case, customer satisfaction received higher scores than customer loyalty. This could indicate that in service E, the customer may have a true choice when purchasing.

The same person, who had generally reported more critical scores for the other services, similarly reported in Figure 35 the most critical evaluation (1.5, 0.5). His score had a pronounced effect on the means as only three customer persons gave their opinions. In Figure 35, one can see that the customer's internal evaluations were almost completely opposite; customer satisfaction with the service was rated from 1.5 to 10, and customer loyalty was rated from 0.5 to 8. One reason for this may be that the service has been provided to the customer on an on-and-off basis, and that the service was considered highly person dependent. The customer was confident of being satisfied with the service if they could get the persons they wanted for the service. The customers' opinions seemed to be split; those who were dissatisfied would not like to purchase the service and those who were satisfied would consider buying the service. The supplier's internal opinions were very scattered.

The customer is in principle interested in consulting services. In order to make sales in this area, the customer should be convinced that they can get the persons they believe will be capable of taking care of the work. (Supplier)

On the consultancy service side, the customer has bought the service occasionally. The customer has been satisfied with the service, but the loyalty is not particularly good. (Supplier)

7.5.6 Customer Satisfaction and Loyalty with Respect to Service F

Only two customer scores and one supplier evaluation were recorded for the service. The person from the supplier's organisation who gave his score for the service was considered a non-central person. The customer had the service previously, but has not purchased the service lately. According to the customer, this is an important service when starting the operations of a network, but the customer judged that they no longer needed this service from the supplier, as they considered themselves self-sufficient. Furthermore, there were certain issues related to the pricing of the service.

The supplier person rated customer satisfaction far higher than did the customer persons. The supplier rated customer satisfaction by claiming that the customer had been satisfied, but the customer recorded that they would be dissatisfied with the service. In customer loyalty, the supplier person reported the lowest customer loyalty score, which was as low as the lowest customer score for loyalty. Both the customer and the supplier considered it unlikely that the customer would purchase the service again.

Service F used to be an important service, as the service is important for the beginning of a starting operator. Now the customer does the work by themselves. (Customer)

7.6 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager

There were no questions posed to the customer or the supplier about customer satisfaction, or about customer loyalty regarding the service manager. There was discussion of the service manager concept in the interviews.

The service manager concept has concretised the work in the care phase. Used metrics and reporting clarifies for the customer the true added value by the care phase services. (Supplier)

Clearly, added value by the service manager is the single point of contact. The service manager's own behaviour can reduce the number of customer complaints. (Supplier)

The supplier saw that a good service manager could tackle certain pitfalls in the supplier's organisation by his own actions and maintain customer satisfaction higher. The service manager's role in the selling and identifying new business opportunities was underlined.

The service manager has an important role in discussing with the customer and at the same time crystallising the fundamental issues. (Supplier)

Initially, there was no service manager in place. The implementation of the project progressed nicely and the relationship with the customer was good. After the customer launched their network, panic set in and the relationship with the customer soured. The customer needs someone in the supplier organisation when they launch their network. (Supplier)

There seems to be different views about the role of the service manager internally in the supplier's organisation. Some believe that the service manager should concentrate on daily operative issues while others see that the service manager should concentrate more on such tactical issues as feedback and operations issues instead.

Proactiveness of the service manager is considered an important characteristic. The care concept is very dependent on the service manager, which makes the concept vulnerable. (Supplier)

It was agreed that the care concept could lead to an even closer relationship between the supplier and the customer, whereas still there was considered to be quite a bit of bureaucracy. The customer would like to see in the supplier's attitude that reflects the saying, "your problem is my problem". The key for the successful care is proactiveness. (Customer)

It is important for the customer to feel they can trust to service manager. The principle of care is all right and what is required is experienced persons in key roles. If these are done correctly, the customer considers that they produce a strong loyalty effect. (Customer)

7.7 Customer Compass

Chapter 4.7.7 (Customer Compass) explains in detail how the grading of customer compass was carried out. Eight supplier persons and three customer persons graded the customer compass. Generally, the supplier regards himself as having a closer relationship (Figure 36) with the customer whereas the customer sees himself as more distant from the supplier. The service manager can be viewed as having very much the same view as the rest of the supplier's personnel. In **customer portfolio management**, the supplier (4.63) believes that the customer has a position as an individual, while the customer (2.67) sees himself as treated more as a part of a group. Main reason for this may be how the customer has been treated with regard to a recent new technology product in the supplier's organisation. The supplier's main focus appears to be on the immediate service that is been provided locally; the role that the rest of the supplier's organisation plays when the customer forms his perception seems to more ignored. The service manager is no exception, as he/she (5.00) views the customer portfolio as individual.

The relationship between customer and supplier was characterised as a close one. Both parties get together quite nicely and recently, and the supplier's employee satisfaction had improved. (Supplier)

With a new technology, the customer was left with a bitter taste in their mouth because of how they had been treated. (Customer)

Regarding **value proposition design**, the customer (2.33) and supplier (2.57) share the same views; both see that the value proposition would be most closely associated with an extended offer. The service manager (1.00) has a more limited view of the supplier's capability and views the supplier as purely a core product provider.

The value proposition is seen as an extended offer. It was considered that earlier on, the supplier was trying to provide a wider scope, but it could not cope with it. (Customer)

Regarding the **value-added role**, the customer (1.33), supplier (2.00) and service manager (3.00) all have different views. The customer sees that the supplier's approach is almost purely a product-based seller that does not take great account of how those products would add value to the customer. The service manager sees that the supplier already has the perspective of a process manager trying to start from the customer and find ways to provide value to the customer's value chain. The rest of the supplier organisation is somewhere halfway between these two opinions.

The value-added role of the supplier is seen as a product manager. The supplier was criticised for providing products to the customer and, once it has been provided, only after that does the supplier start thinking about how the product could be utilised. (Customer)

In **reward and risk sharing**, the customer (1.00), supplier (1.00), and service manager (1.00) are unanimous in their opinion of the issue – the relationship is based on market based pricing. Reward

and risk sharing most concretely confirms what was discussed with both the customer and the supplier. Customers do not wish to share their profits and suppliers do not seem eager to take more risk.

The current mode of providing services and equipment to the customer seems to be based to a large extent on cost, and there is little room for a value-added model. (Supplier)

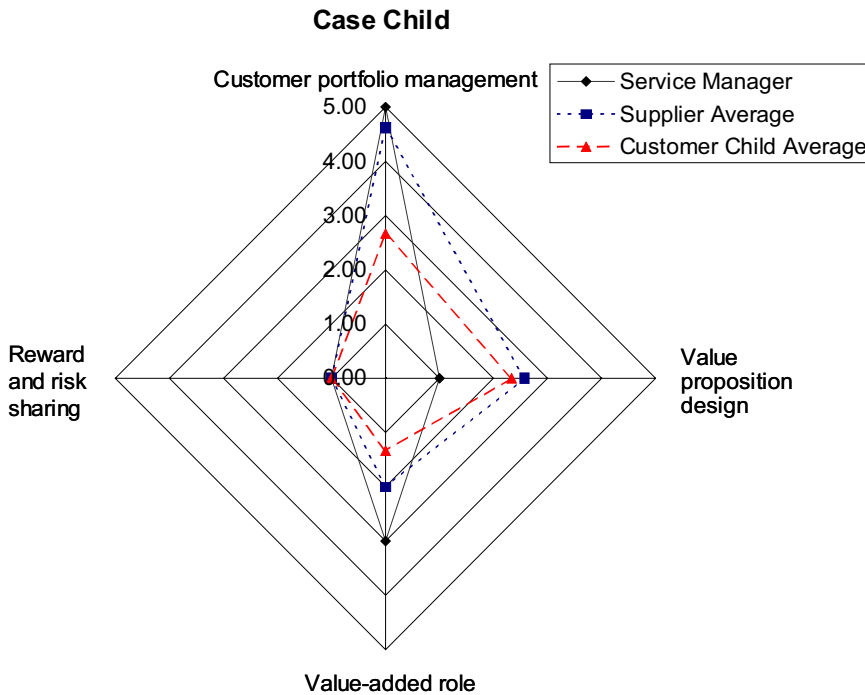


Figure 36. Customer compass of customer Child

7.8 Summary

Customer Child's network had been in commercial use for a couple of years. The supplier-customer communication network was somewhat limited. Those who were in contact communicated frequently with each other. The service manager was one of the most active influencers in the care phase related issues towards the customer. Some customer-supplier communication has been by-passed by the customer's contacts with the supplier's higher management.

Care phase was considered relatively more important for total customer satisfaction than its relative proportion of the customer sales. The customer and the supplier had slightly different views on the importance of individual services. Both the customer and the central persons of the supplier considered service A the most important service, while the supplier considered service C the most important service. Services B and C were also considered among the most important services by all. Customer's and supplier's perceptions about individual services displayed certain varying viewpoints. Particularly in service C, the supplier gave a much more positive evaluation of customer satisfaction and loyalty than did the customer. In the interviews, one customer person reported low customer loyalty values for different services.

The service manager concept was considered a valuable phenomenon and can be considered an important link for the supplier's trust building. As regards customer relationship, customer Child felt that they were not treated very individually. The customer-supplier relationship seemed to be characterised by mutual suspicion.

8 CASE INFANT

8.1 Background and Position of Company Infant in the Market Area

Customer Infant and the supplier have had approximately a year-long relationship since the building of the network started. The business negotiations relating to the contract had already started. The supplier has been the only supplier for the particular technology, and additionally delivers equipment to the competitors of customer Infant in its market area. Customer Infant is still very much focused on building its organisation, and it can be considered very much in the project phase. The customer focuses on building network coverage and capacity. The operation of the network is beginning to be important as the network is in commercial use. The competition is high as customer Infant is one of the latecomers to the market. The number of subscribers needs to grow in order to make operations profitable. The supplier provided a particularly high number of services.

Four customer persons and 13 supplier persons were interviewed. All of the interviewees additionally provided quantitative information regarding the services. In the supplier organisation, seven people were natives and the remaining six persons represented various nationalities. The customer persons represented various nationalities. The number of services studied was eight. The interviews were carried out in November 1999.

8.2 Customer Contacts and Relationships

All the supplier ($n = 13$) and customer persons ($n = 4$) reported their relationships with the supplier and customer Infant personnel. The interviewees reported contacts with 59 different persons on issues related to the care phase: 33 supplier persons and 26 customer persons were identified as the other party of communication.

8.2.1 Contacts within the Supplier Company

Nine supplier persons were identified as central persons, six of whom conducted a high activity of interaction and three persons a medium activity of interaction. The high activity interactors include the service manager, project manager, account managers, and one manager involved in the customer's operative tasks. Table 24 represents the number of contacts that the other interviewees reported having with them. In addition, Table 24 shows as a percentage the number of contacts the first person to be omitted as a non-central person and the party not selected had received. For a complete explanation of the abbreviations of the central persons, see Appendix 3. The party not selected means in this case that a part of the organisation was nominated as the other party of the communication, and this part of the organisation represents several persons. The first non-central person had two fewer contacts than the last person selected as a central person.

All the supplier's central persons were in contact with each other, at least with a unidirectional arrow (Figure 73 in Appendix 4). The interactions of high activity interactors (Table 24) were examined a little more closely. All high activity interactors interacted with each other. All the interaction was confirmed, with the exception of the MR, who was not interviewed and therefore could not confirm the communication (Figure 74 in Appendix 4). Most of the communication between the high activity central persons takes place on a daily basis and at least on a weekly basis.

Table 24. Selection of supplier's central persons¹¹

¹¹ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer

Persons with whom interviewees have reported contacts	MS	MP	MA1	MR	MA2	MA3	MM	MO2	MO1	Party not selected ¹²	First non-central person
No. of supplier contacts	11	11	10	12	10	10	5	6	7		
No. of customer contacts	4	4	4	2	3	3	3	2	1		
Contacts/Max. Contacts	15/16	15/16	14/16	14/17	13/16	13/16	8/16	8/16	8/16	10/17	6/16
Relative Degree of Contacts	94%	94%	88%	82%	81%	81%	50%	50%	50%	59%	38%
Activity of Interaction	High	High	High	High	High	High	Med.	Med.	Med.	Med.	Low

(MA1 = Account Manager; MA2 = Account Manager; MA3 = Account Manager; MM = Manager of Marketing; MO1 = Manager of Operations; MO2 = Manager of Operations; MP = Project Manager; MR = Manager of Resources; MS = Service Manager)

8.2.2 Contacts within Customer Company Infant

In the customer organisation, ten persons were identified as central persons, as presented in Table 25. Three persons had a high activity of interaction and seven persons had a medium activity of interaction. Three of the customer's central persons were selected based on their organisational position of at least a director level person, which justified their selection as a customer's central person. These three persons were not interviewed. In total, only four of the ten customer's central persons were available for interview and three of them gave comments on their interactions. The difference between the last individual selected as a central person and the first non-central person was as low as one nominated contact more. All the interviewed customer persons were identified as the customer's central persons, three of them were high activity interactors. For a complete explanation of the abbreviations of the central persons, see Appendix 3.

persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

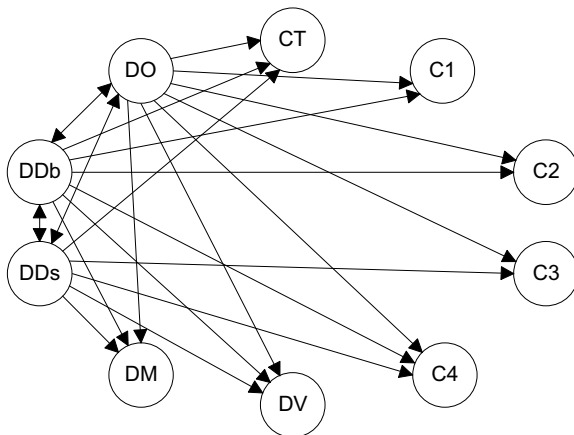
¹² Party not selected refers to a part of the organisation that was nominated as the other party of the communication. It is likely to refer to several different persons, but as in any case this "not selected party" was not selected as a central person, there has not been given an effort to identify the individual persons.

Table 25. Selection of the customer's central persons¹³

Persons with whom interviewees have reported contacts	CT	DO	DDs	DV	C2	DM	DDb	C1	C3	C4	First non-central person
No. of supplier contacts	8	8	8	7	6	5	5	5	1	0	
No. of customer contacts	3	2	2	3	2	3	2	2	2	3	
Contacts/Max. Contacts	11/15	10/14	10/14	10/15	8/15	8/15	7/14	7/15	3/15	3/15	6/15
Relative Degree of Contacts	73%	71%	71%	67%	53%	53%	50%	47%	20%	20%	40%
Activity of Interaction	High	High	High	Med.	Med.	Med.	Med.	Low	Low	Low	Low

(CT = Chief of Technical; C1 = Chief of 1; C2 = Chief of 2; C3 = Chief of 3; C4 = Chief of 4; DDb = Director of Design; DDs = Director of Design; DM = Director of Marketing; DO = Director of Operations; DV = Director of Vendor)

In the customer's internal communication network, the interviewees had a considerable amount of interaction with each other. The customer's internal communication network is presented in Figure 37. With a larger number of customer interviews, the customer's internal communication could have been better described.

**Figure 37. Communication network of customer Infant's central persons¹⁴**

(CT = Chief of Technical; C1 = Chief of 1; C2 = Chief of 2; C3 = Chief of 3; C4 = Chief of 4; DDb = Director of Design; DDs = Director of Design; DM = Director of Marketing; DO = Director of Operations; DV = Director of Vendor)

¹³ "No. of supplier contacts" is the total number of the interviewed supplier persons, who reported contacts with the person. "No. of customer contacts" is the total number of the interviewed customer persons, who reported contacts with the person. "Contacts" has a sum of the "No. of supplier persons" and "No. of customer persons" divided by the maximum number of possible nominations by the interviewees. If the person him/herself was interviewed the total number of possible nominations is one less than for the persons that were not interviewed.

¹⁴ Figure 37 is derived from the Table 25, as the persons selected as central persons in Table 25 were selected and their contacts with each other were drawn to Figure 37, as they had reported in the interviews.

The three high activity interactors of the customer communicate with each other on a daily basis. In the interviews, it was frequently mentioned by both the supplier and particularly by the customer that one of these three had a significant relationship with the supplier. It appeared that, in customer organisation, it was enough for the rest for that one person to be satisfied with the care services. That does not mean that the rest of the customer persons were satisfied with the services or agreed with that one person.

8.2.3 Interaction between Supplier and Customer Infant

The interaction between the supplier and customer is presented in Figure 38, which shows the communication between the supplier's and customer's central persons. From Figure 38 we can see the high values relating to many central persons. There are numerous interactions between the supplier and customer and the communication network is very complicated. From Figure 38 one can notice that the supplier has only a few contacts with the customer's persons C3, C4 and DM. The service manager does not have any contacts with those persons. In the customer organisation, almost all the high level managers are involved in the care phase.

The relationship between the supplier and the customer can be characterised as the customer's search for its place as a company and at the same time the supplier has a fast growth that makes things more complicated. (Supplier)

From the supplier's point of view, it is interesting to note that the number of supplier's contacts outside of the customer's technical personnel is quite limited. There are some contacts with other parts of the customer organisation such as its marketing department. Contacts with marketing are mainly carried out by account managers.

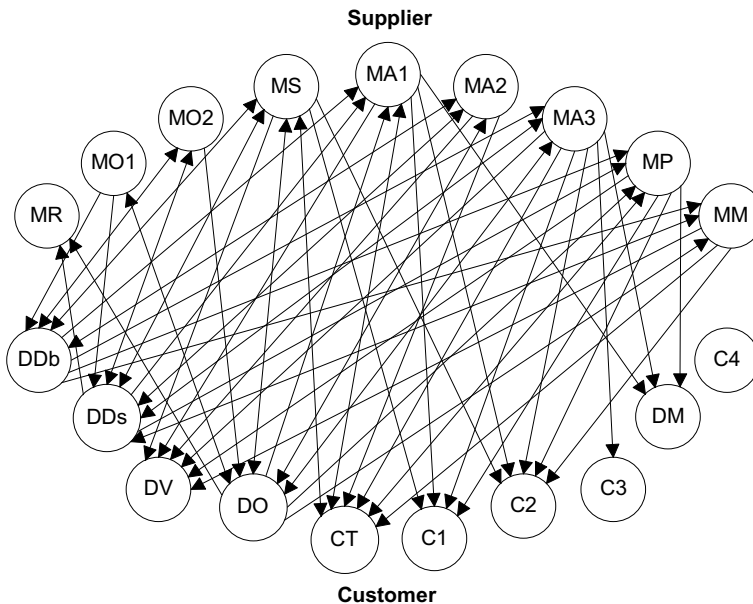


Figure 38. Communication network of the supplier and customer Infant central persons

(Supplier: MA1 = Account Manager; MA2 = Account Manager; MA3 = Account Manager; MM = Manager of Marketing; MO1 = Manager of Operations; MO2 = Manager of Operations; MP = Project Manager; MR = Manager of Resources; MS = Service Manager; Customer: CT = Chief of Technical; C1 = Chief of 1; C2 = Chief of 2; C3 = Chief of 3; C4 = Chief of 4; DDb = Director of Design; DDs = Director of Design; DM = Director of Marketing; DO = Director of Operations; DV = Director of Vendor)

In Figure 39, the contact network of the supplier and the customer has been further simplified and shows only the contacts of high activity interactors. The supplier's high activity central persons and the customer's high activity central persons interacted with each other (Figure 39), as the relationships were at least identified using minimum unidirectional arrows. There is no bigger difference in the contacts of the service manager and the project manager. Their contacts do not appear task specific, but they appear very similar.

The relationship with the customer is seen to be improving. The customer has received personal attention from the highest level of the supplier's organisation. Now things are improving. (Supplier)

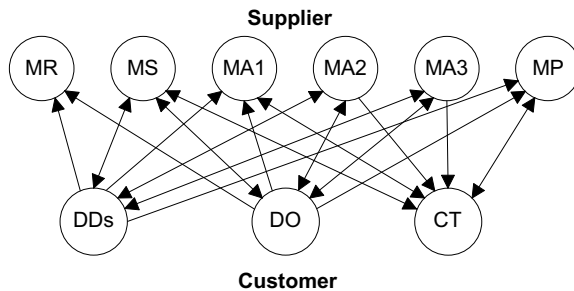


Figure 39. Communication network of the supplier and customer Infant high activity central persons

(Supplier: MA1 = Account Manager; MA2 = Account Manager; MA3 = Account Manager; MP = Project Manager; MR = Manager of Resources; MS = Service Manager; Customer: CT = of Technical Chief; DDs = Director of Design; DO = Director of Operations)

Only the MS, MA2, MA3, DDs, and DO had confirmed contacts with every one else in the other organisation (Figure 75 in Appendix 4). The service manager was the only person who had confirmed daily contacts with the customer's central person, who was assumed to be the critical person for the customer's decisions in the care phase. In the interviews, the service manager's role during the care phase was highlighted, as he was clearly appreciated by the customer.

In an analysis of the relationship between the supplier and customer Infant, it is first important to note that, from the supplier's point of view, the very high number of central persons in both organisations is a potential risk for the supplier. In the customer organisation, many people must be convinced and, at the same time, there are many supplier persons who communicate with the customer. It seems that there is no mechanism to guarantee that the supplier sends consistent messages to the customer. The service manager and project manager work with the same people and due to nature of their work they can send conflicting messages to the customer. The interaction with the customer cannot be characterised as ideal from the supplier's point of view. As the customer's higher management is involved in most of the discussions, it is further questionable whether the arrangement is in their interest. According to the interviews, there have recently been incidents that could indicate that the structure of the communication could be changing and may be becoming more structured.

The service manager is considered to have an excellent personal relationship with the customer, particularly towards the customer's key people. (Supplier)

8.3 Relation of the Care to Customer Satisfaction

The interviewees had varied backgrounds. In the supplier organisation, the interviewees were all to some extent familiar with the care phase, but eight persons from the supplier organisation were not solely involved with care phase activities. Two of the customer persons were involved directly in the care phase operations. In Case Infant, two supplier persons were not asked about the importance of

the care phase because the interview schedule did not permit it. Otherwise, all of the interviewees reported their evaluation on the importance of the care phase, which is summarised in Table 26.

Table 26. The importance of the care phase in Case Infant

	Care is relatively less important than its sales	Importance of care equals its sales	Care is relatively more important than its sales	Not available
Supplier (n = 13)	1	0	10	2
Customer (n = 4)	1	0	3	0

The supplier's and customer's personnel considered the care phase more important for the customer's total satisfaction than its share of the total sales to customer Infant. One reason for the importance of the care phase identified by the customer was the visibility of care activities. In a number of comments, the importance of the care phase was judged to represent over 50 per cent of total customer satisfaction.

The customer considered that major part of its customer satisfaction as defined based on the performance of the care phase. First, the product must be good enough and after that, the customer judges cost and services. (Customer)

The importance of care is created mainly by its daily visibility. The impact of care phase on the image of the company is regarded as important. (Supplier)

One person from the supplier organisation and one person from the customer organisation regarded that the importance of the care was less than its share of the sales to the customer suggested. The customer person had limited exposure to care phase activities. In both the supplier's and customer's responses, the care phase was seen as an important phenomenon, but the project phase was considered to be even more important. Both the customer and supplier realised that currently the operations were project focused, although both considered that this would change in the future. The customer mentioned that so far the ratio between care and project meetings had been about 1:50.

At the beginning of the project, nobody cared about care phase activities. (Supplier)

The supplier's project manager is the most important person for the customer and the next most important person is the service manager. The importance of the service manager is becoming increasingly important. (Customer)

Currently, the most important issue for the supplier is the project. In one to two years' time, the focus will change towards care. (Supplier)

The customer commented that if the care phase fails to deliver, there is no point purchasing from the supplier at all. The supplier was criticised for its many charging principles. The customer felt insecure about what the final price and the real price for services would be. The co-operation between the supplier and the customer is seen as close, but it could be closer. The supplier feels that their own operations people should view things more from the customer's perspective.

8.4 Most Important Services

In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail. Percentages in Table 27 indicate the percentage of respondents who selected service as being among the most important services. Only the customer's central persons were interviewed in Case Infant; therefore all of values relating to customer Infant and the customer's central person are the same. In the customer organisation, four persons were interviewed, which could cause a high error of margin. Ten persons were identified as the customer's central persons.

The services in Table 27 have been sorted firstly according to the "Customer" column, secondly according to the "Supplier" column, and thirdly according to the "Supplier's central persons" column.

The scope of the contract in Case Infant was broader than in the other cases and therefore the number of services provided to the customer was higher. This might have partly contributed to the spread of supplier's views in Case Infant.

Table 27. Most important services in Case Infant

	Supplier (n = 13)	Customer (n = 4)	Supplier's central persons (n = 8)	Customer's central persons (n = 4)
Service A	31%	100%	13%	100%
Service F ₂	54%	25%	63%	25%
Service C	23%	25%	38%	25%
Service F	8%	25%	13%	25%
Service D	0%	25%	0%	25%
Getting new services	0%	25%	0%	25%
Service I	46%	0%	63%	0%
Service J	23%	0%	25%	0%
Service E	15%	0%	25%	0%
Service B	15%	0%	13%	0%
Service Manager	15%	0%	0%	0%
Internet Solutions	0%	0%	0%	0%
Service K	0%	0%	0%	0%

Customer Infant unanimously considered that the most important service for them was service A by a very clear margin. The other services that received nominations were services F₂, C, F, D, and getting new services. Getting new services was not a service itself, but the customer identified new service creation as one of the most important issues. No other services were nominated by the customer persons.

The supplier's order of importance differs from the customer's evaluations. Service A, which was the most important according to the customer, was, according to the supplier, ranked third, and sixth according to the supplier's central person. The five most important services according to the supplier were services F₂, I, A, C, and J. According to the supplier's central persons, the ranking was: F₂, I, C, J, and E.

Service I was considered by supplier as one of the top two services because the customer does not have their own resources at the moment to perform those activities. (Supplier)

Services that were recognised by the customer, but not at all by the supplier, were service D and getting new services. In total, five services were cited by the supplier, but not by the customer: service I, service J, service E, service B, and the service manager. The supplier's central persons recognised the same services, although the service manager was not included to their selection.

8.5 Analysis of Customer Satisfaction and Loyalty with Respect to Services

The interviewees were asked about the customer's satisfaction and loyalty with respect to services A, B, C, D, E, F, F₂, I, J, K, and the service manager (Table 28). Comments in Figure 40 to Figure 49 are presented in the following chapters, which discuss services A, B, C, D, E, F, F₂, I, J, and K. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Table 28. Supplier's and customer's satisfaction and loyalty scores with respect to services in Case Infant

Service	Satisfaction	Loyalty	Satisfaction	Loyalty
	Supplier (n = 13)		Customer (n = 4)	
Service A, entire sample				
Mean	6.96	8.15	6.50	8.00
Standard deviation	1.31	1.90	1.29	2.16

Service A, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	6.88	8.38	6.50	8.00
Standard deviation	1.25	1.69	1.29	2.16
Service B, entire sample	Supplier (n = 11)		Customer (n = 2)	
Mean	6.36	7.41	5.00	6.00
Standard deviation	2.00	1.96	0.00	1.41
Service B, central persons	Supplier (n = 7)		Customer (n = 2)	
Mean	6.00	7.57	5.00	6.00
Standard deviation	2.38	2.23	0.00	1.41
Service C, entire sample	Supplier (n = 12)		Customer (n = 3)	
Mean	6.96	8.00	5.83	9.33
Standard deviation	1.54	1.21	1.76	1.15
Service C, central persons	Supplier (n = 7)		Customer (n = 3)	
Mean	7.14	8.29	5.83	9.33
Standard deviation	1.57	0.95	1.76	1.15
Service D, entire sample	Supplier (n = 10)		Customer (n = 4)	
Mean	6.60	7.70	7.88	8.38
Standard deviation	1.71	1.49	1.03	1.49
Service D, central persons	Supplier (n = 6)		Customer (n = 4)	
Mean	6.83	7.33	7.88	8.38
Standard deviation	1.94	1.86	1.03	1.49
Service E, entire sample	Supplier (n = 13)		Customer (n = 4)	
Mean	4.23	2.31	3.75	1.25
Standard deviation	1.44	2.03	1.71	1.89
Service E, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	3.81	2.69	3.75	1.25
Standard deviation	1.00	2.12	1.71	1.89
Service F, entire sample	Supplier (n = 9)		Customer (n = 2)	
Mean	6.50	7.17	7.00	4.00
Standard deviation	1.84	1.17	0.00	2.83
Service F, central persons	Supplier (n = 6)		Customer (n = 2)	
Mean	6.50	7.25	7.00	4.00
Standard deviation	2.26	1.33	0.00	2.83
Service F₂, entire sample	Supplier (n = 13)		Customer (n = 4)	
Mean	7.50	6.92	5.50	4.75
Standard deviation	0.79	1.80	1.73	1.71
Service F₂, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	7.44	6.50	5.50	4.75
Standard deviation	0.62	2.07	1.73	1.71
Service I, entire sample	Supplier (n = 11)		Customer (n = 4)	
Mean	7.86	7.55	5.00	3.50
Standard deviation	0.98	1.46	0.82	1.29
Service I, central persons	Supplier (n = 7)		Customer (n = 4)	
Mean	8.07	7.93	5.00	3.50
Standard deviation	0.84	1.48	0.82	1.29
Service J, entire sample	Supplier (n = 11)		Customer (n = 4)	
Mean	7.00	6.82	5.75	4.50
Standard deviation	1.41	1.78	0.96	0.58
Service J, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	7.13	6.75	5.75	4.50
Standard deviation	1.46	1.91	0.96	0.58
Service K, entire sample	Supplier (n = 13)		Customer (n = 4)	
Mean	7.65	7.81	5.75	5.50
Standard deviation	0.75	0.83	0.96	1.73
Service K, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	8.00	8.13	5.75	5.50
Standard deviation	0.76	0.58	0.96	1.73
Service Manager, entire sample	Supplier (n = 13)		Customer (n = 4)	
Mean	8.27	8.62	7.50	6.25
Standard deviation	0.78	0.62	1.00	3.10
Service Manager, central persons	Supplier (n = 8)		Customer (n = 4)	
Mean	8.38	8.75	7.50	6.25
Standard deviation	0.92	0.46	1.00	3.10

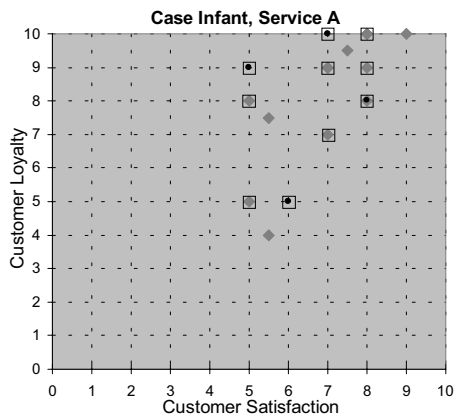


Figure 40. Customer satisfaction-loyalty matrix for service A



Figure 43. Customer satisfaction-loyalty matrix for service D



Figure 41. Customer satisfaction-loyalty matrix for service B

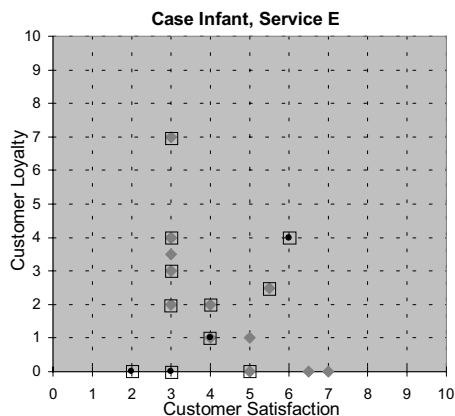


Figure 44. Customer satisfaction-loyalty matrix for service E



Figure 42. Customer satisfaction-loyalty matrix for service C

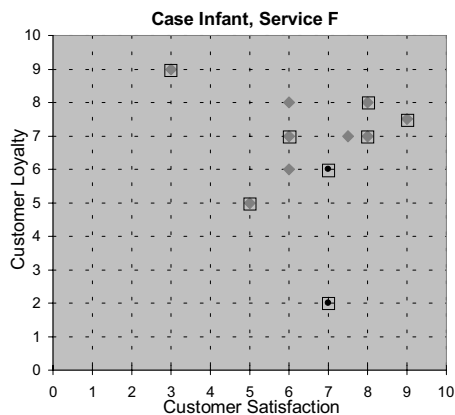


Figure 45. Customer satisfaction-loyalty matrix for service F

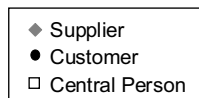




Figure 46. Customer satisfaction-loyalty matrix for service F₂



Figure 48. Customer satisfaction-loyalty matrix for service J



Figure 47. Customer satisfaction-loyalty matrix for service I

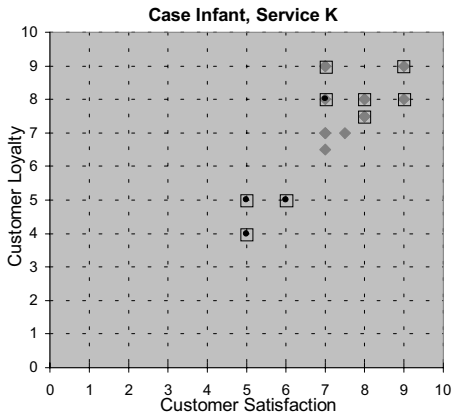
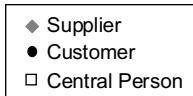


Figure 49. Customer satisfaction-loyalty matrix for service K



In Case Infant, the supplier provides more extensive service packages for the customer than is normally the case. The supplier additionally recognised that the supplier employed junior staff in the customer interface. Communication was raised as an issue by the supplier, who judged the customer's perception of their activities to be worse than their own perceptions of their service provisioning. The importance of proactiveness with customer Infant was also highlighted.

The supplier feels that communication is a problem with the customer. There is a gap between performance and perceived performance by the customer. The customer perceives performance as worse than in reality. (Supplier)

Pricing was considered by the customer to be just one decision factor. (Customer)

The customer observed that, to a certain extent, the supplier lacked clear interfaces and responsibility within its organisation. (Customer)

8.5.1 Customer Satisfaction and Loyalty with Respect to Service A

When comparing customer and supplier, it came out that the supplier (6.96) reported (Table 28) a slightly higher level of customer satisfaction than the customer reported (6.50). Regarding customer loyalty, the supplier (8.15) and the customer (8.00) reported very much the same evaluations. When comparing the supplier and its central persons, it came out that the supplier (6.96, 8.15) provided similar scores to those of the supplier's central persons (6.88, 8.38) for customer satisfaction and customer loyalty. When comparing the customer's central persons and the supplier's central persons, it came out that the customer's central persons (6.50, 8.00) were moderately less satisfied with and loyal to the service than the supplier's central persons (6.88, 8.38) believed.

The most critical person regarding service A was the supplier's non-central person, who reported (5.5) for customer satisfaction and (4) for customer loyalty. One supplier's central person reported also (5, 5), as well as one customer's central person reported (6, 5). These three scores were the most critical evaluations. The supplier's fiercest critic mentioned certain problems that there had been with a particular range of products. The critical supplier's central person commented that there had been arguments concerning the quality of the software and therefore saw the customer's satisfaction as neutral. The customer's most critical person raised the point that, according to him, the service was an on-off -service depending on whether the customer chose to use the supplier's equipment or not. Loyalty depends on the customer's business and hardware decisions. Therefore, his ranking of five for customer loyalty is interesting as the customer had just contracted the supplier to deliver equipment to them in a new contract and no other supplier's had been selected at the time of the interview. The plotted points (Figure 40) are in the top-right corner of the matrix, except the three critical evaluations. Based on the interviews, one can estimate that the customer is reasonably satisfied with the service, and quite likely to repurchase the service. Based on the plotted points, one can further assume that the service is slightly more of a captive type. This is supported by the fact that, in each of the observation groups, customer loyalty received a higher mean than did customer satisfaction.

The supplier is considered rather flexible about service A. The customer remembered that they had requested a special feature that they had in fact received. Therefore, the interviewee had a good impression of the supplier's service. (Customer)

The customer considered service A as outrageously expensive, which diminishes customer satisfaction. The supplier, for its part, handles the service in a professional manner. (Customer)

The customer's loyalty to this service was judged to be influenced by business and hardware decisions. (Customer)

8.5.2 Customer Satisfaction and Loyalty with Respect to Service B

When comparing customer and supplier, it came out that the reported customer satisfaction and loyalty by the supplier (6.36, 7.41) in Table 28 were higher than judged by the customer (5.00, 6.00). When comparing the supplier and its central persons it came out that the supplier (6.36) reported customer satisfaction moderately higher than did the supplier's central persons (6.00). As regards customer loyalty, the central persons (7.57) rated customer loyalty similarly to the supplier personnel (7.41). The supplier's central persons are closer to the customer in judgements of customer satisfaction than the supplier personnel. Customer satisfaction with the service can be considered to be in a neutral area. As regards customer loyalty, the supplier's central persons reported 7.57 and the customer reported 6.00.

It seems that internally the supplier seems to have quite a spread in opinions on how captive the service is and how satisfied the customer is with the service (see Figure 41). The more critical supplier evaluations were reported by the supplier's central person (3, 6) and non-central person (4, 4), both of whom felt that the supplier had problems with the service. Based on the individual points, it is difficult to predict the shape of the customer satisfaction-loyalty curve. Customer loyalty revealed

higher mean values than customer satisfaction in each group. Based on this finding, one can predict that the service is more likely to be of a captive nature.

The service itself is fine, the concept of service B is good, and the quality of repairs is fine, but customer satisfaction is rated lower because of price. (Customer)

8.5.3 Customer Satisfaction and Loyalty with Respect to Service C

When comparing customer and supplier, it came out that customer satisfaction according to the supplier's evaluation (6.96) was clearly higher in Table 28 than scored by the customer (5.83). The supplier's evaluation of customer loyalty (8.00) was that the customer is very likely to purchase the service. As regards customer loyalty, the customer (9.33) sees the service as a must-buy. Internally, when comparing the supplier and its central persons it came out that the supplier's central persons reported similarly customer satisfaction scores (7.14) and customer loyalty scores (8.29) to the supplier personnel (6.96, 8.00). When comparing the customer and supplier's central persons it came out that the supplier's central persons (7.14) are far more positive about the customer's satisfaction than the customer was (5.83). As regards customer loyalty, the customer (9.33) reported a higher customer loyalty than did the supplier's central persons (8.29).

The lowest customer score was (4, 8) because of the supplier's attitudes towards the service. All of the lowest supplier's scores (4, 8), (5, 6), and (5, 7) were reported by the supplier's non-central persons. These persons mainly identified problems with the visibility of the supplier for the customer. In all groups, customer loyalty received clearly higher scores than customer satisfaction. Consequently, the service is one that the customer will purchase. Figure 42 shows that all of the plotted points are located in the top half of the matrix and most of the points are in the top-right corner of the matrix; the customer is very loyal to the service. As regards customer satisfaction, the opinions are far more scattered. The customer hears about problems regarding the service from the supplier, but also from mobile users.

Service C is invisible to the customer, as all the activities are handled internally, and the customer does not see them. What is observed by the customer are the results, i.e., if there are problems, they are seen by the customer. (Supplier)

The customer is forced to use the supplier for service C if the customer has chosen the supplier as its equipment provider. (Customer)

The service has some visibility for the customer and is happy about the communication between the supplier and the customer. The supplier's attitude is relaxed. (Customer)

8.5.4 Customer Satisfaction and Loyalty with Respect to Service D

When comparing customer and supplier, it came out that the supplier rated service D lower in customer satisfaction (6.60) than the customer (7.88) in Table 28. The customer appears to be relatively satisfied with the service. As regards customer loyalty, the customer reported higher scores (8.38) than the supplier (7.70). When comparing the supplier and its central persons it came out that the supplier's central persons (6.83) reported slightly higher levels of customer satisfaction than the supplier personnel reported (6.60). As regards customer loyalty, the central persons (7.33) reported lower scores compared to the supplier personnel (7.70). When comparing the customer and the supplier's central persons, it came out that the supplier's central persons (6.83, 7.33) reported lower scores for customer satisfaction and customer loyalty compared to the customer (7.88, 8.38). In Figure 43, the customer points are close to the diagonal of the matrix, whereas the supplier's views are more scattered. Thus, in all groups customer loyalty received higher scores than customer satisfaction. Based on plotted points and on the comparison of the means, the customer-satisfaction loyalty curve could be estimated as somewhere close to the diagonal.

The most critical customer evaluation was (6.5, 6.5). This person did not have negative opinion of the service, but the service did not provoke much feeling with the customer. The supplier's two non-

central persons felt that there had been very little training and reported the most critical views about the supplier in the customer satisfaction axis. As regards customer loyalty, the two most critical views were reported by the supplier's central persons, who saw that the customer had a limited need for service D because of the size of the customer's organisation.

The supplier states that, as some of service D had been provided free of charge earlier, this has damaged the image of the service. (Supplier)

Service D is considered an easy area for the customer to cut costs. On the other hand, if the customer reduces its spending on service D, it will be impossible for the customer to change the supplier for other services. (Supplier)

Service D consisted of some basic training. The interviewee had participated in one basic training course and rated it as good. (Customer)

8.5.5 Customer Satisfaction and Loyalty with Respect to Service E

In service E, when comparing customer and supplier, it came out that the mean of customer satisfaction reported in Table 28 by the supplier (4.23) and the customer (3.75) were reasonably close to each other, both the customer and the supplier clearly identified that the customer was dissatisfied with the service. At the same time, customer loyalty was rated very low by the supplier (2.31), but still higher than reported by the customer 1.25. When comparing the supplier and its central persons, it came out that the supplier (4.23, 2.31) and its central persons (3.81, 2.69) opinions are similar. As regards customer satisfaction, the central persons' evaluations are close to each other, although the supplier has a marginally more positive view; the supplier's central persons reported 3.81, and the customer's central persons 3.75. As for customer loyalty, the supplier's central persons (2.69) estimated the supplier's chances of reselling the service to the customer higher, while still very unlikely, than did the customer (1.25). Customer loyalty received clearly lower scores than customer satisfaction in each group. The plotted points in Figure 44 are mainly located in the bottom-left corner of the matrix. Based on the points, the customer satisfaction-loyalty curve could be estimated to be of a competitive nature.

The most critical customer evaluations, (2, 0) and (3, 0), were reported by the customer's central and non-central persons who were in daily contact with planning issues. They both identified a number of issues that caused them to be unhappy with the service and considered the service as a lost business for the supplier. The more critical evaluations by the supplier (3, 2), (4, 1), and (5, 0) were reported by their one non-central person and two central persons. Similar issues were raised, as was similarly done by the customer.

Service E will be taken over by the customer, who will outsource it further to a subcontractor. The supplier sees that their future opportunities lie in technology and in specific and special solutions, but they are likely to be individual projects. (Supplier)

In the interviews, it was pointed out that the supplier had advised the customer what to do and had spent too much time arguing. In some cases, the supplier had been proven wrong. The supplier judged themselves incapable of handling the customer's expectations effectively.

The customer believed that the supplier had a hidden agenda to sell more hardware for the customer. There had been interface and communication problems between the customer and the supplier. (Customer)

Service E lost its credibility in the eyes of the customer, but the customer cannot identify what had gone wrong with the service. The end result of the service was good, but the price they had paid for it was too high. (Customer)

8.5.6 Customer Satisfaction and Loyalty with Respect to Service F

In service F, when comparing customer and supplier, it came out that the supplier (6.50) and the customer (7.00) are similar in their evaluation of customer satisfaction, as seen in Table 28. As regards customer loyalty, the supplier's personnel (7.17) rated loyalty considerably higher than did the customer (4.00). The supplier saw customer loyalty as relatively high, whereas the customer stated that they were not that likely to repurchase the service. When comparing the supplier and its central persons it came out that the supplier personnel (6.50) and supplier's central persons (6.50) reported the same means for customer satisfaction, and reported similar scores for loyalty (7.17 and 7.25). When comparing the customer and supplier's central persons, it came out that the supplier's central persons (6.50, 7.25) reported a lower level of customer satisfaction than did the customer (7.00), but a considerably higher level of customer loyalty than the customer (4.00).

The supplier regarded customer satisfaction and loyalty roughly the same, but the customer evaluated customer loyalty was clearly lower than customer satisfaction with the service. Consequently, the shape of the customer satisfaction-loyalty curve is difficult to estimate. Based on Figure 45 one can assume that the service is relatively neutral, but a final conclusion is difficult to draw. Service F is used for small repairs that are difficult to foresee and in which the customer does not have expertise. Service F had mainly consisted of such small tasks as base station optimisation and antenna works. The customer reported the most critical evaluation (7, 2). This person stated that he did not have an impression of the service. The supplier's more critical evaluations were more optimistic. Some of the supplier persons underrated the customer's satisfaction with the service, but as regards loyalty, the supplier seems to be overly optimistic.

The service functions quite well. The supplier lacks some people. This lack is more related to the quality of the people than to the quantity of people. (Supplier)

8.5.7 Customer Satisfaction and Loyalty with Respect to Service F₂

Service F₂ was as a service that had some of the characteristics of service F. When comparing customer and supplier, it came out that the supplier's mean (7.50) for customer satisfaction was considerably higher than the customer's (5.50), as in Table 28. As regards customer loyalty, the supplier (6.92) reported higher scores than the customer (4.75). When comparing the supplier and its central persons, it came out that the supplier personnel (7.50, 6.92) reported slightly higher scores for customer satisfaction and customer loyalty than did the supplier's central persons (7.44, 6.50). Regarding customer satisfaction and loyalty, the supplier's central persons (7.44, 6.50) reported far higher evaluations than did the customer (5.50, 4.75).

The most critical evaluation (3, 3) was reported by the customer's central person, who complained about the supplier's lack of experience in the service. Otherwise, the customer and the supplier evaluations were plotted relatively close to each other. Nevertheless, three customer persons out of four were more dissatisfied with the service than any person from the supplier organisation had recognised. The supplier considered that the service adds only a limited amount of value for the customer, therefore the service must be priced competitively.

2nd line maintenance is considered a service the customer is likely to take over at some point. When the customer takes over, it is mainly considered to be a cost issue. If the supplier is capable of providing good service and high customer satisfaction, the customer might be reluctant to replace the supplier. (Supplier)

Customer satisfaction received higher scores than did customer loyalty in each group. All customers gave the same or a lower score for customer loyalty than for customer satisfaction. Based on Figure 46 and on the means, one can assume that the shape of the customer satisfaction-loyalty curve is likely to be of a competitive type. It is interesting to note that, internally, the supplier's views on customer loyalty are somewhat scattered, but the spread in customer satisfaction is rather narrow.

8.5.8 Customer Satisfaction and Loyalty with Respect to Service I

In Table 28, when comparing customer and supplier, it came out that the supplier (7.86) and the customer (5.00) had considerably different views on the customer satisfaction. As regards customer loyalty, the customer reported even lower scores (3.50) and the difference with the supplier's scores (7.55) was even greater. Based on the customer's replies, their satisfaction is quite low, although the score falls in neutral territory, and their likelihood of repurchasing is very low. When comparing the supplier and its central persons internally, it came out that the supplier's central persons (8.07) reported a slightly higher level of customer satisfaction and customer loyalty (7.93) than did the supplier (7.86, 7.55). When comparing the customer and supplier's central persons it came out that the supplier's central persons (8.07, 7.93) have a considerably more positive view on the customer's satisfaction and loyalty than did the customer (5.00, 3.50).

The customer person, whom the supplier rated as an important person for the care, reported the most positive score. The supplier's central person reported the supplier's worst score (7, 5). He expressed that the customer had not been in control of the service and considered this an issue for the customer. The customer stated that they had been disappointed in the service in some of areas.

Service I has been resourced with the supplier's own personnel and with some subcontracted resources. The customer is been thought to be aware that skills utilised for the service are not commonly available in the market place. The customer expects these people to work as if they were the operator's own personnel and not employed by the supplier. (Supplier)

In all groups, customer satisfaction received higher scores than did customer loyalty. Individually plotted scores in Figure 47 reveal even more clearly the difference between the customer's and supplier's evaluations: there is a mismatch between the customer's and the supplier's evaluations of the service. All of the supplier's scores are plotted to the top-right corner of the matrix and the customer's scores are plotted to the lower part of the matrix. The customer's highest score is at the same level as the worst scores reported by the supplier in terms of both customer satisfaction and, customer loyalty. Based on the plotted points and the means, the service can be considered a slightly competitive type. The customer's score leads one to believe that the curve could be even more competitive than the plotting shows, as the number of customer points is minimal.

8.5.9 Customer Satisfaction and Loyalty with Respect to Service J

When comparing customer and supplier, it came out that in Table 28 the customer reported lower scores (5.75, 4.50) than the supplier (7.00, 6.82) for both customer satisfaction and the customer loyalty. When comparing the supplier and its central persons, it came out that the supplier's central persons reported similar score (7.13, 6.75) for customer satisfaction and customer loyalty than the supplier (7.00, 6.82) reported. When comparing the customer and supplier's central persons, it came out that supplier's central persons (7.13, 6.75) have more positive evaluation on both customer satisfaction and customer loyalty than the customer (5.75, 4.50).

Customer satisfaction received higher scores than did customer loyalty in each group. The customer's scores are located to the bottom again (Figure 48). This time the supplier gave the lowest mark, but the majority of the scores reported by the supplier are clearly higher than the customer's scores. Based on the means and plotted points, the shape of the customer satisfaction-loyalty curve is likely to be of a competitive type, but only slightly. If the customer's score is the correct one, the shape of the curve is somewhat more competitive than can be interpreted from the supplier's scores. The supplier's central person reported the most negative score (5, 3). The three other more critical supplier scores (5, 5), (5, 8) and (8, 5) were reported by one non-central person and two central persons. It seems that the supplier's central persons had an intuition about the situation, but the means attenuates that finding. The central persons took a more analytical approach to the service in their arguments than the one non-central person did. The central persons thought that the service was not clear in its approach and that the analysis could be improved.

Service J lacks proactiveness from the supplier's side. The customer seldom receives feedback from the supplier on the network. The customer is forced to ask for service, although they pay for it all the time. (Customer)

8.5.10 Customer Satisfaction and Loyalty with Respect to Service K

In Table 28, when comparing customer and supplier, it came out that the supplier (7.65, 7.81) reported considerably higher levels of customer satisfaction and loyalty for the service compared to those of the customer (5.75, 5.50). When comparing the supplier and its central persons, it came out that the supplier's central persons (8.00, 8.13) share a moderately more positive evaluation of the service than the supplier (7.65, 7.81). When comparing the customer and supplier's central persons, it came out that the supplier's central persons (8.00, 8.13) take a considerably more positive view of both customer satisfaction and customer loyalty than the customer (5.75, 5.50). The means of groups vary, as two groups gave higher ratings for customer satisfaction than for customer loyalty, one group reported higher ratings for customer loyalty and one group reported identical ratings for both satisfaction and loyalty on average. This could imply that loyalty to the service could directly correlate with customer satisfaction.

There are two groups of plotted points in Figure 49. The first group comprises the three customer points. Their scores are lower in both customer satisfaction and loyalty compared to the other group. The other group consists of supplier's points and one customer point. The plotted points allow us to estimate that the shape of the customer satisfaction-loyalty curve would be close to a straight line from point (0, 0) to point (10, 10). The supplier's non-central person (7, 6.5), who felt that the supplier had certain internal issues that should be tackled in order to manage the service, reported the most negative score from the supplier. The supplier's central person reported the most positive view of the service.

The supplier views that service K has a good price-quality ratio. (Supplier)

The service manager saw that some of the more experienced supplier persons did not have the mind setting of an operator. (Supplier)

8.5.11 Customer Satisfaction and Loyalty with Respect to Internet Solutions

In Case Infant, one customer person and five supplier persons rated the Internet solutions. The one customer person considered himself as the right person to judge how the service was progressing and what the customer will do with the service in the future. Supplier personnel rated the Internet solutions far lower in terms of customer satisfaction than did the customer. The customer rated customer loyalty considerably lower than the supplier did.

Internet solutions were considered to have potential, particularly for training purposes. At the national level there could be added information. (Supplier)

Internet solutions should provide access to technical information and the possibility to submit questions and receive answers 24 hours a day. The customer had used Internet solutions and found them good. Internet solutions were considered an easy tool for finding information. (Customer)

8.6 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager

In Case Infant, the extensive scope of the services provided to the customer was thought to have changed some of the processes from the service manager's point of view. The means for the service manager are presented in Table 28. The supplier views that the service manager concept has not been utilised by the customer to its full potential. The service manager is considered a single point of contact that has necessary resources available. The customer values the service manager as a care phase dedicated person.

The customer considered that the service manager was a critical person for them. The only negative characteristic of the service manager is the fact that he is not customer's employee. (Customer)

The service manager's job was seen as an optimiser of the supplier's business rather than the customer's needs. (Customer)

The service manager should have an overview of the network. The value added by the service manager is considered to be his experience, seniority, and ability to understand the customer and the telecommunications system. The service manager is a person with whom the customer would like to consult. Escalations to the supplier organisation are done via the service manager. The supplier believes that, without the service manager, there would be many persons responsible for various tasks related to care phase. The impact of the service manager on customer relationships is seen as considerable, comparable to the importance of account manager.

The service manager is a person who compensates for the shortcomings of other people, but he/she cannot hide things from the customer. (Customer)

The existence of a service manager prevents escalation of issues throughout the supplier's organisation. (Supplier)

Internally, the service manager drives the care business and the rest of the organisation then follows the service manager. The service manager is seen as a person that helps the supplier to gain further business with the customer. At the same time, the service manager should be able to maintain the customer's customer satisfaction. From the sales point of view, the service manager concept decreases the number of complaints to the account manager. It also has clarified the roles between the project manager and the service manager. Nevertheless, the concept could be yet further clarified and communicated.

8.7 Customer Compass

Chapter 4.7.7 (Customer Compass) explains in detail how the grading of customer compass was carried out. Figure 50 shows that the customer and the supplier personnel are quite close to each other in their opinions, apart from the service manager, who considers the relationship to be on a somewhat deeper level. The service manager has a different perspective in all the other dimensions to the customer portfolio management than the supplier or the customer. The total number of respondents was thirteen supplier persons and four customer persons.

In **customer portfolio management**, the customer reported (3.67) the lowest score, closely followed by the service manager's opinion (4.00). The average supplier's opinion (4.58) is very close to the individual portfolio. The customer and the service manager viewed that the customer portfolio is closest to a combination of a group and individual.

The customer portfolio of the supplier was considered a combination of the individual and group. How local operations were handled was considered individual, but when it comes to tools and support functions, they were considered more close to a market approach, as the supplier has a standard approach. (Supplier)

Concerning **value proposition design**, the customer's (3.33) and supplier's (3.58) evaluations are almost identical. The supplier sees the proposition as slightly broader. Both the customer and supplier see that the scope of the work is more than just an extended offer. The service manager (5.00) saw the value proposition of the supplier to be a total solution, the difference with the customer's evaluation is considerable.

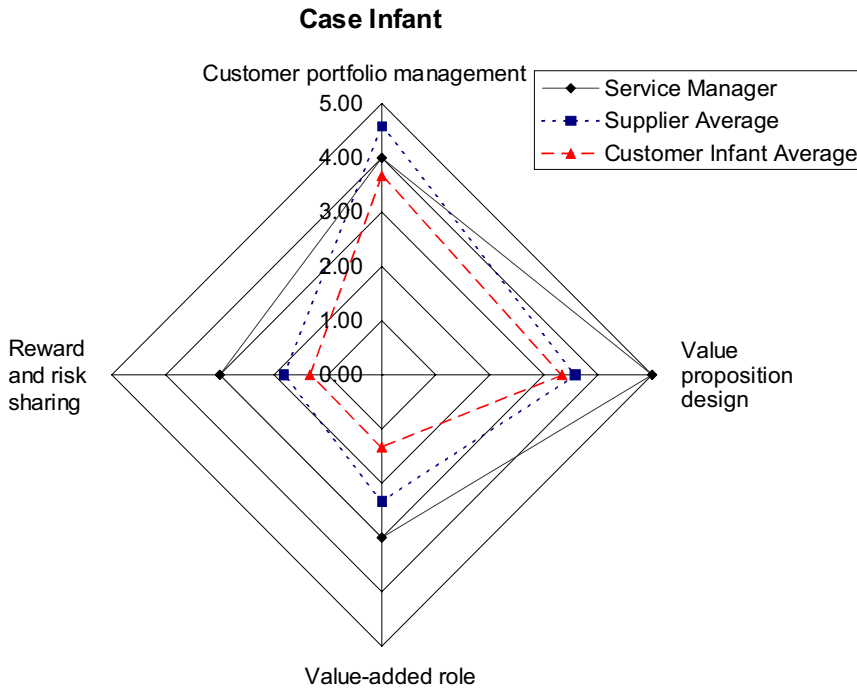


Figure 50. Customer compass of customer Infant

As regards **value-added role**, the customer (1.33) sees the role of the supplier very much in terms of a product manager approach. The supplier (2.33) sees the approach as a combination of a product and process manager, while a little closer to the process manager. The service manager (3.00) understood that the supplier's approach would be a process manager approach.

In **reward and risk sharing**, the customer (1.33) saw that the depth of the relationship was the most limited one and considered risk and reward sharing to be quite close to neutral sharing. The supplier (1.82) considered risk and reward sharing a combination of neutral and performance based sharing. At the same time, the service manager (3.00) saw sharing to be performance based.

The customer was reluctant to opt for performance based pricing, and at the same time was worried that there would be no incentive for the supplier to perform. The customer would like to see more commitment from the supplier and thus believed in the idea of incentives for the supplier to perform.

The service manager saw quite a difference in the relationship compared to the customer in different areas of the relationship as he considered that the supplier's value proposition was clearly wider than the customer believed. The value-added role was thought much more customer-oriented, and risk and reward sharing was evaluated considerably higher than in the customer's view.

8.8 Summary

Customer Infant had recently launched their network and was a partially defected customer with regard to service E, in which the customer had taken over the service. Moreover, this service was evaluated particularly low in the study.

The supplier-customer communication network was very wide and the number of contacts of those persons who were in contact was relatively high. The service manager was one of the central persons with a significant role. The service manager's contacts were numerous internally and externally in the care phase. On the whole, a considerable number of supplier persons were in constant contact with customer Infant.

The supplier's main focus was in the project phase. The importance of the care phase was recognised, but its role was predicted to be greater in the future. The customer's and supplier's idea of the relative importance of individual services differed from each other. The customer and supplier had similarly differing viewpoints on several services. The customer considered service A the most important service, whereas the supplier considered service F2 the most important service. The customer considered services C, D, F, and getting new services to be the other important services. The supplier and its central persons considered services I, A, C, and J to be important services. The supplier had a more optimistic perception of the supplier's services than did the customer's personnel. As regards service I, there was a major difference, as the supplier was far more positive on the service, as in the case of services F2 and K than the customer's evaluation. The service manager was wished to bring clarity to the care phase and was considered a critical person for the customer

9 CASE BIRTH

9.1 Background and Position of Company Birth in the Market Area

Three supplier persons were interviewed but no customer persons could be interviewed. All of the interviewees provided quantitative information regarding the services. Customer compass was not covered in Case Birth because of the interviewees' limited time. In the supplier organisation, two persons were natives and one was an expatriate. The number of studied services was nine. The interviews were carried out between June and July 1999. Case Birth represents a case from the early stage of the supplier-customer relationship and the case is located as the beginning of the life cycle curve utilised in the present study.

9.2 Customer Contacts and Relationships

The sample interviewed in Case Birth was limited. Only three supplier persons could be interviewed and two of those interviews were brief; the local service manager could be interviewed more thoroughly. Therefore, there a thorough study of the relationships was not carried out.

Based on the interviews, as well as on the other cases, the local account manager is one of the central persons in the case of this account. Two other interviewees mainly dealt with the care phase. The person, who was working as a mentor for the service manager was a central person. The service manager was unlikely to be a central person, as during the interviews he himself stated that he did not have contacts with the customer. The service manager was relatively active within the supplier's organisation, but seemed to have had a lesser role at the time of the interviews, perhaps partially because the project phase was at the centre of attention.

Because of the nature of the contract negotiation, it was impossible to access the customer and interview their personnel. At the time of the interviews, the customer was still negotiating with several suppliers, although the supplier saw a realistic chance of getting a contract with the customer. At the time, the supplier was putting most of its energy into negotiation and only a relatively small number of people were involved with issues related to the care phase. Some time after the interviews had been conducted, the supplier got the contract with customer Birth.

The contact network of Case Birth was not considered relevant. All those interviewed recognised that they were in frequent communication with the project manager. The service manager had no contact with the customer at the time of the interviews. This may reflect that the supplier and perhaps the customer were not focusing in the care phase. The service manager was not regarded as one of the central persons by the account and was not involved in the contract negotiations with the customer. The service manager was involved in the preparation work for the contract, but other persons had handled the care-related issues in the negotiations.

*The service manager did not have any customer contacts at the time of the interviews.
(Supplier)*

9.3 Relation of the Care to Customer Satisfaction

In Case Birth, only the service manager was asked about the importance of the care phase. The schedules of other interviewees did not allow the question to be asked. The service manager considered the importance of the care phase to the total customer satisfaction as higher than the estimated relative sales of the care phase compared to total sales to customer Birth. This kind of reply can also be expected from the service manager. According to the service manager, marketing personnel and also service marketing personnel were more concerned about rollout issues. All

personnel were focusing on the rollout of the network. It seemed that the rollout of the network was the most important matter and that the care phase was secondary issue.

The supplier is still in the bidding phase and this is reflected in customer contacts. The supplier's focus is currently entirely on the selling phase. (Supplier)

The service manager did not have knowledge of issues that particularly would have satisfied or dissatisfied the customer. (Supplier)

The supplier considered the customer to be an experienced customer that had its focus on the rollout. The supplier believed that the customer was not purely focusing on the rollout of the network, but they also took care phase into account. The difference of the focus towards the rollout was considered to be more than for the care phase.

The supplier considered itself more flexible than the competition in the care phase and saw this as an advantage that that was of benefit to the customer. (Supplier)

9.4 Most Important Services

In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail. Percentages in Table 29 indicate the percentage of respondents who selected service as being among the most important services. In Case Birth, the central persons are not compared with the non-central persons, as both samples were small. The figures presented here give an indication of the supplier's interpretation of the different services that were likely to be delivered to the customer.

One of the interviewees did not value the importance of the individual services, although the person did rate customer satisfaction and loyalty of the individual services. As a result, only two persons rated the importance of the services and only one of the supplier's central persons reported an opinion on the services. Therefore, the findings in Case Birth are only indicative. The services in Table 29 have been sorted in the order firstly according to the "Supplier" column, and secondly by the "Supplier's central person" column. In service E, three different kinds of service were proposed and they are therefore rated separately using different indices.

Table 29. Most important services in Case Birth

	Supplier (n = 2)	Supplier's central person (n = 1)
Service F	100%	100%
Service D	50%	100%
Service E ₂	50%	100%
Service A	50%	0%
Service C	50%	0%
Service B	0%	0%
Service E ₁	0%	0%
Service E ₃	0%	0%
Service G	0%	0%

The supplier in Case Birth considered that the most important service for the customer was service F. Other services to score in the rating were service A, service C, service D, and service E₂. The supplier did not consider the remaining services important. It is interesting to realise that only in the case of one service were the two persons who rated the services unanimous. The interviewees had differing views from each other on all the other services.

The service manager highlighted the importance of service A. The rest were more difficult for him to judge. (Supplier)

9.5 Analysis of Customer Satisfaction and Loyalty with Respect to Services

In the case of customer Birth, the service packages to be sold to the customer had not yet been agreed with the customer. The preliminary discussions were ongoing and the supplier was preparing an offer for the care phase services to the customer. Therefore, Case Birth deals with the supplier's expectations.

As the gathered data were somewhat limited in scope compared to the other cases, there will be only a brief description of the reported scores for the services. It was additionally decided to present only the data for customer satisfaction and loyalty for the entire supplier because of the limited size and depth of interviews. Case Birth is used to describe characteristics and supplier behaviour for the care phase when the negotiations with the customer are still ongoing. The available data is mainly utilised in the cross-case analysis, as there is no other observation groups that could be compared within Case Birth. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Table 30. Supplier's satisfaction and loyalty scores with respect to services in Case Birth

Service	Satisfaction	Loyalty
Service A	Supplier (n = 3)	
Mean of entire sample	6.67	8.00
Standard deviation	1.15	1.73
Service B	Supplier (n = 3)	
Mean of entire sample	7.67	7.00
Standard deviation	2.31	2.65
Service C	Supplier (n = 3)	
Mean of entire sample	8.00	7.00
Standard deviation	0.00	1.00
Service D	Supplier (n = 3)	
Mean of entire sample	8.33	9.00
Standard deviation	0.58	0.00
Service E₁	Supplier (n = 3)	
Mean of entire sample	5.67	4.33
Standard deviation	1.53	0.58
Service E₂	Supplier (n = 3)	
Mean of entire sample	8.00	6.67
Standard deviation	1.73	2.31
Service E₃	Supplier (n = 3)	
Mean of entire sample	8.00	6.00
Standard deviation	1.00	1.00
Service F	Supplier (n = 3)	
Mean of entire sample	6.33	4.33
Standard deviation	2.87	2.52
Service G	Supplier (n = 3)	
Mean of entire sample	6.67	6.00
Standard deviation	1.53	1.00

The interviewees were asked to estimate how satisfied they would think the customer would be with the service, if the service were delivered to the customer at the start of the project and if the customer had bought it. As regards customer loyalty, the interviewees judged how likely the customer would be then to repurchase the service after the first purchase.

9.5.1 Customer Satisfaction and Loyalty with Respect to Service A

In Table 30, the results of service A are presented. Customer loyalty was expected to be higher than customer satisfaction. Thus, in general terms, it is more likely that the customer satisfaction-loyalty – curve would be of a forced loyalty type. The interviewees did not believe that the customer would be very satisfied with the service, but the probability of repurchasing was considered quite high because there is no other party that could effectively provide service A. The supplier's pricing was thought to bring customer's satisfaction down.

The customer will very probably purchase service A. (Supplier)

9.5.2 Customer Satisfaction and Loyalty with Respect to Service B

The results regarding service B are shown in Table 30. A comparison of the means of satisfaction and loyalty reveals that the supplier predicted that the customer would be more satisfied with the service but the likelihood of purchasing service B would be at lower level than the satisfaction with the service. As the deviations are quite high, it is difficult to draw definite conclusions on the shape of the possible satisfaction-loyalty –curve.

Service B was considered a far easier service to sell. Because of the availability of local possibilities for modifying the service, it was thought that service B would be a service more likely to generate customer loyalty. (Supplier)

9.5.3 Customer Satisfaction and Loyalty with Respect to Service C

The results of service C are presented in Table 30. A comparison of the means of satisfaction and loyalty demonstrate that the supplier considered that the customer's satisfaction would be higher compared to their loyalty to the service C. The scores reported by the interviewees were relatively close to each other in service C. This may be considered an indication that the interviewees' had the most consistent view on this particular service. The supplier predicted that customer would be quite likely to buy service C.

9.5.4 Customer Satisfaction and Loyalty with Respect to Service D

In service D, the interviews and their results are shown in Table 30. A comparison of the means of satisfaction and loyalty reveals that the supplier rated both the customer's expected satisfaction and loyalty quite high. Based on the scores, one could predict that the customer would be satisfied and very likely to purchase the service. The scores reported by the interviewees were most consistent in service D. In general terms, the customer satisfaction-loyalty –curve would be of a forced loyalty type.

The customer will purchase service D and like it. The quality of service D is very good. (Supplier)

Service D was thought to be quite easy to sell now and in the future. (Supplier)

9.5.5 Customer Satisfaction and Loyalty with Respect to Service E

In the case of service E, the supplier was in discussions with the customer on providing three different kinds of service, which are here referred to as service E₁, service E₂, and service E₃. All

these services are to a certain extent similar, while differences can be found in some of the details. Because of the scope of the services, they could be provided at the same time to the customer.

In service E₁, the results are shown in Table 30. In service E₁, the mean of customer satisfaction was not particularly high. Customer loyalty is seen as even lower. The likelihood of customer purchasing has decreased below 50 per cent. The nature of service E₁ can be considered a competitive service and its satisfaction-loyalty curve can be predicted to follow that shape.

Service E₁ is complicated. (Supplier)

The customer was considered somewhat unlikely to purchase the service from the supplier. (Supplier)

Table 30 presents the results of the interviews regarding service E₂. The customer is thought to be satisfied with the service, but it can be seen that the customer's loyalty would not be quite as high. As in service E₁, service E₂ can be considered a competitive service and its satisfaction-loyalty curve can be predicted to be of same type as in service E₁. For service E₂ the supplier's chances of selling the service were thought to be slightly better than for the rest of service E.

Table 30 summarises the interviews regarding service E₃. In service E₃, the customer is expected to be satisfied with the service, but as in the rest of the E services, it was thought that the customer's loyalty would be lower than their satisfaction. The reason for the shape of the customer satisfaction-loyalty –curve in service E₃ is perhaps its nature as a competitive service.

The customer was thought to purchase the service E from the supplier. But the repurchase likelihood was thought to be lower in the future. (Supplier)

9.5.6 Customer Satisfaction and Loyalty with Respect to Service F

In service F, the means of the supplier for customer satisfaction and loyalty differ somewhat from each other (Table 30). The mean for satisfaction can be rated as only medium level – the customer cannot be judged to be either satisfied or dissatisfied. Loyalty is rated to be on the lower side, as the customer's purchasing probability is considered to be below 50 per cent.

Service F was not considered very important as the sales personnel thought that the customer would be capable of taking care of it on its own. (Supplier)

The customer will definitely need the service for a certain period. But the customer would not need the service after two years, as the customer would take over after they have learnt how to perform tasks of service F. (Supplier)

9.5.7 Customer Satisfaction and Loyalty with Respect to Service G

The means of satisfaction and loyalty are reasonably close to each other (Table 30). The customer's satisfaction is rated very much in the area of indifference and at the same time loyalty is close to a probability of 50 percent.

Service G was considered a service that the supplier thought the customer was going to purchase on a regular basis, but nevertheless the service was found to be difficult to judge. (Supplier)

9.6 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager

In Case Birth, the scope of the services to be provided for the customer was not known at the time of the interviews. As the service manager was not directly interfacing with the customer it is reasonable to believe that, at time, the customer would not have had a very clear picture of the role and duties of the service manager.

The supplier itself had some idea of the role of the service manager and how it was planned to be presented to the customer and how it would develop in the future. The value added of the service manager was that he represented somebody in the supplier's organisation who focuses on the services in the care phase, whereby the supplier does not leave the customer alone in the care phase. When service content and prices are discussed, the service manager would be involved and this was thought to lead to a better offer for the customer, but there had been no feedback from the customer to verify the status of the offer. It was noted that, during the contract negotiations, marketing people dealt mainly with rollout related issues, but not with care phase issues, which were purely left for the service manager to deal with.

As the service manager had been already nominated before the deal was closed with the customer, the supplier is capable of making a higher quality offer to the customer. The reliability of the supplier is improved when it comes to the care phase services. (Supplier)

The service manager's role in Case Birth was considered larger than it had originally meant to be in an early phase of the customer relationship by the supplier's standard definitions. (Supplier)

9.7 Summary

The operator was still negotiating with the supplier about making a deal to purchase a network from the supplier and therefore no customer persons were interviewed; the number of interviewed supplier persons was limited. The service manager was not directly involved in customer negotiations, and care phase issues were handled by other customer services persons and the account manager. The supplier-customer communication network was relatively limited, but those persons who were in contacts were in contact intensely. The service manager was not considered a central person.

The customer's and supplier's focus was on the contract negotiation and future equipment deliveries. Care phase was not considered to be very important, as it was not yet a concern. The supplier and its central persons considered services F, D, and E2 the most important services. In addition, services A and C were seen as important.

10 CROSS-CASE ANALYSIS

The findings of five case studies and two benchmark studies are compared in this chapter. Cross-case analysis begins with positioning the individual cases on the network life cycle curve. This was done to gain a deeper understanding of the differences between less and more experienced customers in the care phase. The findings of the interviews are summarised. First, customer contacts and the customers' relationships with the supplier are described. In addition, the importance of the care phase for customer satisfaction is analysed. The importance of the individual services for the customer is judged both from the customer's and supplier's point of views. This is followed by an analysis of the individual services in terms of customer satisfaction and loyalty. The dilemma of the central persons in comparison to all the interviews is discussed. A characterisation of the supplier's attitudes transforming from optimism to pessimism is presented based on the cross-case data. Finally, the role of the service manager in the care phase is analysed, and customer compass is utilised in the positioning of supplier-customer relationships.

As mobile telecommunications is a relatively new industry, several things were examined, as mobile telecommunications may enable the development of new business models. The care phase is assessed in different stages of the life cycle curve; both the views of the customers and the supplier are discussed. The customer and supplier had ongoing communication since long before the recent service manager concept, which was launched for the customers about the same time. Therefore, the service manager concept cannot alone explain the differences in customer replies. To explain the differences between the cases, the product life cycle model is utilised and the structure constituted in Figure 51 is utilised. The product life cycle theory has been described more thoroughly in Chapter 1.3. The customers are located on a network life cycle curve. Each of the customers is located according to age, maturity of network, subscriber growth, and relative size of their network. Penetration of mobile phones in the country has been used as a clue to sort out the differences between the size of the network in different countries. In Appendix 5, the cases and their relative position to each other is further clarified.

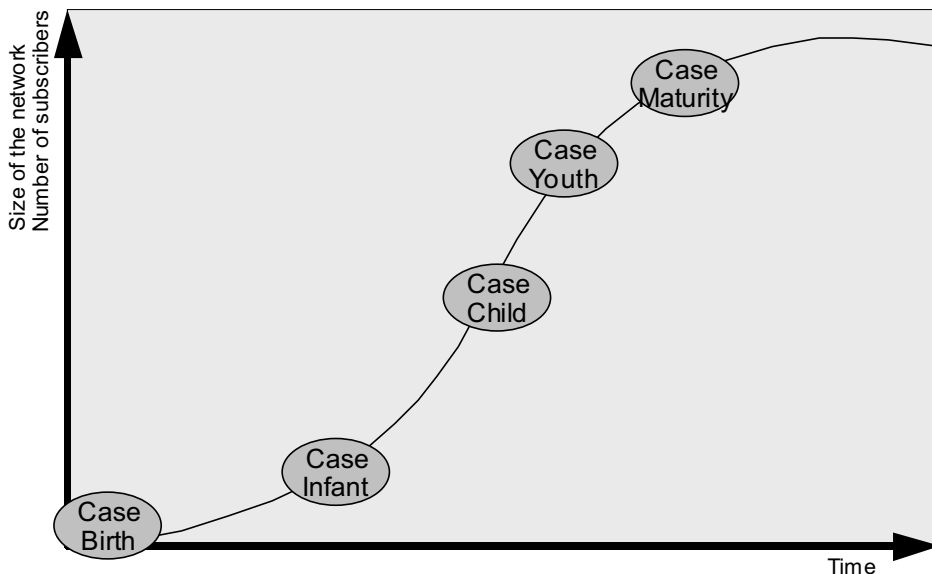


Figure 51. Location of cases relative to each other on the network life cycle curve

Figure 51 illustrates the position of cases on the life cycle curve. The size of the network and the number of subscribers are not in exact proportions. The time scale is relative and each of the case

companies have their own life cycle curves. Case Birth was a start-up case with contract negotiations still ongoing. In Case Infant, the network had already been operational for some time, but the focus of the account was strongly in project phase. In Case Child, the focus was on both the care and project phases. Case Child was the first case whereby the customer could have been described as being in the care phase. In cases Youth and Maturity, the customer had been operating their network for over four and over seven years, respectively. In Case Youth, the customer could be characterised as being an experienced operator, and in Case Maturity the customer was very experienced. The supplier perceived cases Child, Youth, and Maturity as having good results, whereas in Case Infant, some problematic areas were identified, which reduced its profitability. The success of Case Birth could not be judged. In all the cases, financial results of the care phase were positive; Case Child was slightly less profitable than the other cases and was therefore rated as an average for its results.

10.1 Interviews

The interviewees in cases Maturity, Child, Youth, and Infant represented in the customer organisation the engineering type of personnel and their positions in their organisations were from medium-to-higher to higher management. From the supplier, the majority of those interviewed actively contributed to the operations of the supplier towards the particular customer. Certain other of the supplier's personnel, mainly marketing and sales people, were also interviewed. The supplier's personnel represented middle management upwards with similar backgrounds; most of them had an engineering background or were involved in engineering activities.

Table 31. The number of interviewees in the cases

Number of interviewees	Maturity	Child	Youth	Infant	Birth
No. of supplier persons	13	9	8	13	3
No. of customer persons	8	4	5	4	0
No. of services	6	6	8	10	9

Table 31 shows in detail the numbers of interviewees in different cases. In cases Maturity, Child, Youth, and Infant 21 customers' persons and 43 supplier's persons were interviewed, and in Case Birth three supplier persons were interviewed. In cases Maturity and Child, six different services were covered in the interviews, in Case Youth there were eight services, and in Case Infant 10 services were covered. In Case Birth, nine potential services were under discussion. The interviews were selected using the snowball technique explained in Chapter 4.6.1. Barsky (1995) proposes that even managers' and employees' perceptions could be different. In Case Maturity, a small number of operative level supplier persons were interviewed. Based on those interviews, it was decided that there would be no further need to interview people of that level, as they did not have an overall view over the various services and of the importance of services to the customer.

10.2 Customer Contacts and Relationships

In all cases, the supplier had been involved with the customer since the beginning of the network building. It is difficult to distinguish whether some of the changes in customer-supplier relationship were due to the duration of the relationship between the two parties and whether some of the changes were caused by changes in the customer's needs resulting from the customer's new position in the network life cycle curve. For the results of this research, that question in terms of the underlying factors has not addressed, but for future studies, it would be relevant to clarify which of these two factors is the more significant or in fact, whether they can be distinguished.

Table 32 describes the communication of the service manager and account team based on the interviews. In Case Birth, the service manager had no contact with the customer. After this initial start-up phase, the importance of the service manager's role had increased and therefore, in Case Infant, the service manager already had an important role. The role of the service manager has rapidly increased in importance, although the focus of the supplier remained very much on the

project itself. This may also be related to the very active role of the service manager. In cases Child, Youth, and Maturity the service manager is recognised as the central person for his account's communication.

Table 32. Service manager's and account team's role in communication

In order from the youngest to the oldest network	Birth	Infant	Child	Youth	Maturity
Service manager is a central person	--	++	++	++	++
Account team members are the main interface towards customer	-	0	0	++	++

++ = very positive attitude; + = positive attitude; 0 = neutral attitude; - = negative attitude; -- = very negative attitude

The role of account team is another way of checking how communication develops between the supplier and customer over time. In Case Birth, there were contacts with certain of the customer's account team members, and in addition quite a number of marketing and sales people that had contacts with the customer as well. The impression from Case Birth is that not all these contacts were well organised and that many persons were contributing to the direct customer negotiation process.

In Case Infant, all the account team members were involved in communication with the customer. In addition, there seem to be quite a number of other people that had constant communication with the customer. The considerable number of nominated contacts could also indicate more active contacts between different parties. The number of customer contacts could also be partly due to the scope of the supplier's work, as the scope of the contract with customer Infant was wider than in the other cases. The flatness of the customer organisation, which is a result of outsourcing of certain of the activities, could also influence the customer to communicate more with its supplier. The intensity of the service manager's communication was higher than in any other case when measured either by the number of customer contacts or how frequently they were in contact. In Case Child, all the account team members were involved with the customer, but there seemed to be some oddities. Certain of the contacts seem to be directed by people that were not well aligned with the supplier's intentions. To a certain extent, it seemed that the supplier did not necessarily rely on its members of the account team, but had decided to handle issues at a higher level. On the other hand, the customer behaviour, as well as the customer interviews, lead one to believe that there trust was missing in the relationship and that therefore, the customer also escalated issues to the highest level very quickly.

In Case Youth, generally the account team members handled all customer contacts. It was generally the account team, who. In Case Maturity, the account team was the normal contact interface. The role of the project manager was less significant than in the other cases because of the decreasing role of the project. There were also some other persons who played a role in the communication, but the account team was the established point of contact. In the later phases of the network life cycle, contacts from the supplier to the customer were more organised and less overlapping. In cases Youth and Maturity, the supplier's project manager contacted the customer's care phase personnel when required for the implementation of the project. At the same time, in the earlier stages, as in cases Infant and Child, the supplier's project manager and care manager regularly participated in meetings where issues related to both project and care phase were tackled.

The project manager's customer contacts with the care phase are mainly related to the customer's personnel that have an impact on the implementation of the project. (Supplier)

In Case Maturity, one customer's central person was identified who did not communicate with the service manager or the project manager, i.e., with the persons who were in charge of the operational issues of the supplier. When the person's responses on the individual services were studied more carefully, it could be noticed that he did not have an opinion on quite a number of the services. When he did have an opinion, it was quite close to the mean of the others from the customer organisation; his opinions were generally quite neutral. From this point of view, this central person had a similar view on the supplier as the rest of the customer persons.

The supplier organisation, particularly their central persons, had a limited number of contacts with the customer organisation outside of their immediate function. It was realised in all of the cases that, as with the supplier's personnel involved with care phase activities, they had a limited number of contacts with the customer's operation and maintenance organisation. Discussions for example with the customer's marketing or finance and control people were generally missing. Quite a number of the supplier persons who were considered non-central persons, admitted that their contacts with the customer were rather limited. Only account managers had contacts outside of the customer's organisation that could be characterised as engineering. Service managers, like all the others in the supplier organisation, had no or little contact with the customer's marketing and financial people, who were not interviewed in the present study. As marketing and financial persons come from a different background, the customer's views could have differed even more from the supplier's views if these people had been included.

Nevertheless, the selection of people was based on the experience of the people who run the business of the supplier at the account level. Therefore, it is valid to state that necessary people were interviewed from the research point of view. From the business point of view, if the supplier was more familiar with the thoughts of the customer's marketing and financial people, the supplier might be able to add even more value for the customer.

10.3 Relation of the Care to Customer Satisfaction

Innis and La Londe (1994) discovered that several customer satisfaction variables significantly affect a customer's total customer satisfaction. Customer service attributes received high ratings for the importance of customer satisfaction. Attributes for physical distribution of customer service were rated higher than many marketing attributes.

Table 33 shows the summary of the attitudes of the interviewees in different cases towards the importance of the care phase. The attitudes have been categorised into three categories. If the interviewee felt that the importance of the care was less important for total customer satisfaction than its share of customer sales, the answer was classified as negative. If the care phase was thought to be more important for the total customer satisfaction than its relative share of sales, the answer was considered positive. Otherwise, the answer was considered neutral.

Table 33. The importance of the care phase in different cases (% of the respondents)

	Negative	Neutral	Positive	Not available
Case Infant				
Supplier (n = 13)	9%	0%	91%	2
Customer (n = 4)	25%	0%	75%	0
Case Youth				
Supplier (n = 9)	25%	0%	75%	5
Customer (n = 4)	0%	0%	100%	1
Case Youth				
Supplier (n = 8)	13%	0%	88%	0
Customer (n = 5)	0%	0%	100%	0
Case Maturity				
Supplier (n = 11)	0%	0%	100%	5
Customer (n = 8)	0%	17%	83%	2

Based on the life cycle theory, Case Birth presents the initial stages of the life cycle and is presented first although the quantitative data is not available. As there was no data on Case Birth, it has been omitted from Table 33. Qualitatively, the interviewees highlighted in Case Birth that the account was entirely in the selling phase. The focus of the customer was directed towards signing a contract with one or more suppliers. The customer had given some consideration to the beginning of a project. As regards the care phase, some contract negotiations had been carried out, but that was in effect all. In Case Infant, the importance of the care phase was recognised. The supplier saw that the main efforts should be concentrated on the current project. The care phase was considered an area that

can be given more focus in the future. Cases Child, Youth, and Maturity were already in the care phase. It was also revealed in the interviews that both the supplier and the customer seemed to identify the care phase as perhaps the most important issue for the customer. The differences between individual cases were not that large. Out of these three cases, customer Maturity can be identified as the most technologically advanced customer; and the most concerned about future technologies and evolution paths from their current position to those technologies.

When the customer is moving from the project phase to the care phase, the importance of the care is still quite low. As the customer is more mature, they have operated their network for a couple of years and so the importance of the care increases. (Supplier, Case Child)

In cases Birth and Infant, it was made explicit that the importance of building a mobile network was even more important than the care phase. However, in cases Child, Youth, and Maturity, the focus of the customer had clearly shifted from hectic network building to service provisioning to the mobile users. This is seen in Table 33 as a decrease in percentages of the "Care is less important" perspective gradually from Case Infant to Case Maturity. Qualitatively, this finding is supported starting from Case Birth. The main focus of the supplier and customer seems to shift as things progress. The supplier's focus shifts along with the customer's. However, as most of the supplier's revenues are from supplying equipment, that also appears to be supplier's major interest. Once the customer's focus shifts sufficiently towards the care phase, the supplier will similarly pay attention to those issues. Case Birth additionally proves that the supplier cannot speed up the process to shift the customer's focus from the project phase to the care phase, but this process is to be seen as a natural evolution. In all cases, it was revealed that the care phase has an important role for customer satisfaction; this was so even in Case Birth.

10.4 Most Important Services

Barsky (1995) proposed that what is important for one customer may not be important for another. Barsky proposes this in the area of priority marketing, and the idea was applied to different services in general. When a buyer considers closer integration with a supplier, they may consider that it will most likely limit the number of potential suppliers and fear that the partner may take advantage of this by increasing prices or delivering poorer quality or poorer service (Selnes, 1998). Interlocking with the supplier can limit the opportunity to acquire innovations if the supplier lacks the capability of being a leading-edge supplier. Research has shown that there are frequently differences between the views of the supplier's management on customer value and the customers' views on what they say they value (Parasuraman *et al.*, 1985, Woodruff, 1997). This was studied in the present study as well. Table 34 presents the customers' views on the importance of the services in the care phase. In Chapter 4.7.3 (Delivered Services), each of the services have been explained in more detail.

Customer view

Table 34. Most important services according to the customer (% of the respondents)

Cases Services	Infant Customer	Child Customer	Youth Customer	Maturity Customer
Service A	100%	100%	100%	100%
Service B	0%	50%	80%	38%
Service C	25%	75%	80%	25%
Service D	25%	0%	20%	25%
Internet Solutions	0%	n/a	n/a	13%
Service E	0%	0%	0%	0%
Service F	25%	0%	0%	0%
Service F ₂	25%	n/a	n/a	n/a
Service I	0%	n/a	n/a	n/a
Service J	0%	n/a	n/a	n/a
Service K	0%	n/a	n/a	n/a
Service G	n/a	n/a	0%	n/a
Service H	n/a	n/a	0%	n/a
Service Manager	0%	n/a	n/a	25%

(n/a = not available)

Of the services, the most important is service A. Service A was recognised by all the customer's as one of the most important services. In all cases, services A and C were identified by the customers. In Case Infant, services C, D, F and F₂ were rated second in importance. In Case Child, service C was ranked second and service B third in importance. In Case Youth, the customer recognised only three services as the two most important services. In Case Maturity, the customer recognised six services as the most important services. The second position was shared by services B and C, while service D was rated fourth. In Case Maturity, the total number of services recognised as the most important services was six. The second in importance was service B, followed by services C, D, and the service manager in equal third position. Internet solutions were ranked sixth in importance.

The customers were unanimous on the most important service, service A. However, the importance of the second most important service changes over time, shifting from various services at the beginning, first towards service C and later towards service B. In the most mature case, Maturity, the customer looks for other solutions as soon as the "basic needs" of the customer have been satisfied by the functioning processes. The customer may be seeking other services that would satisfy their needs beyond the "basic needs". In contrast, in Case Infant, the customer may not have identified those services that they would need.

Supplier view

Table 35 presents the most important services from the supplier's perspective. The supplier's perception of the most important service for the customer varied from case to case. The same services were identified as the most important only in two cases out of five. In Case Birth, service F was rated the most important service. In Case Infant, service F₂ was considered the most important service. In Case Child, service C was considered the most important service. In Case Youth, the supplier considered service A the most important service. In Case Maturity, the supplier considered service A the most important service.

Table 35. Most important services according to supplier (% of the respondents)

Cases Services	Birth Supplier	Infant Supplier	Child Supplier	Youth Supplier	Maturity Supplier
Service A	50%	31%	67%	100%	90%
Service B	0%	15%	22%	50%	40%
Service C	50%	23%	78%	38%	40%
Service D	50%	0%	0%	25%	20%
Internet Solutions	n/a	0%	n/a	n/a	10%
Service E	0%	15%	22%	0%	0%
Service F	100%	8%	22%	0%	0%
Service F ₂	n/a	54%	n/a	n/a	n/a
Service I	n/a	46%	n/a	n/a	n/a
Service J	n/a	23%	n/a	n/a	n/a
Service K	n/a	0%	n/a	n/a	n/a
Service G	0%	n/a	n/a	13%	n/a
Service H	n/a	n/a	n/a	13%	n/a
Service Manager	n/a	15%	n/a	n/a	10%

In Case Birth, second in importance were services A, C, and D. The supplier did not have a clear idea of the importance of individual services for the customer or where the strengths of the supplier lay. In Case Infant, nine different services were cited as one of the two most important services, according to the supplier's interviewees. The second in importance was service I, the third in the importance was service A, and fourth were services C and J. In addition, services B, E, the service manager, and F figured among the two most important services. In Case Child, the second in importance was service A, followed by services B, E, and F in equal third position. In Case Youth, the second in importance was service B, the third was service C, and service D was the fourth, followed by services G and H. In Case Maturity, second in importance were services B and C, while the fourth in importance was service D. Internet solutions and the service manager were also recognised as the two most important services.

Differences between the supplier and customers

By observing the differences between Table 34 and Table 35, one can determine the major differences between the evaluations of the supplier and the customer. The customers' and the supplier's persons have different evaluations regarding which services are the most important where clear differences can be seen. Although all the customer persons were unanimous on the most important service, service A, the supplier had different evaluations of the services. Only in the most mature cases, cases Maturity and Youth, did the supplier recognise service A as the most important.

In the later stages of the life cycle curve, in cases Child, Youth, and Maturity, both the customer and the supplier nominated the same services, but in Case Infant the supplier recognised only the other service of the two most important services. The service recognised in Case Infant was service F₂, which was among a number of services that were ranked in second position. In Case Child, service A was very closely followed in second spot in the supplier's evaluation. One can also observe on the whole how well those services nominated as the two most important services matched the evaluations of the supplier and the customers. In Case Maturity, the supplier and customer nominated identical services. In cases Youth and Child, the supplier nominated the same services as the customer, but the supplier recognised two additional services. In Case Infant, the supplier recognised four services that the customer had identified. In addition, the customer did not recognise one service that had been identified by the customer, service D. Furthermore, the supplier identified five additional services that the customer had not identified.

The supplier appears to have an insufficient understanding of the true needs of the customer in the early stages of a customer relationship. The supplier's focus seems to be directed towards those issues that are most recently raised by the customer as issues to be tackled, according to the interviews. This finding becomes even more interesting in Case Infant, where the customer was partially defected. The customer had recently told the supplier that they would purchase service E from another source. The supplier's lack of knowledge regarding the customer's priorities in the

services could very well be perceived by the customer as a lack of focus and a conflict of priorities with the customer's perceptions of the most important services. The number of respondents varied from four to eight persons. The supplier samples were slightly larger, but still relatively small, varying from eight to thirteen persons.

Table 36. Number of services named as the two most important services

(Cust. = Customer and Supp. = Supplier)

Cases Services	Infant Cust.	Infant Supp.	Child Cust.	Child Supp.	Youth Cust.	Youth Supp.	Maturity Cust.	Maturity Supp.
Number of services named as the most important services	5	9	3	5	4	6	6	6
Number of services available	12		6		8		8	

The difference between the nominations of the customer and supplier (Table 36) reduced from Case Infant relative to Case Maturity, where the customer and supplier nominated the same services. This can also be interpreted as an indication of the customer's and supplier's similar perceptions of the importance of the services for the customer as the relationship becomes more mature. In Case Infant, the scope of the contract was wider than in the rest of the cases and therefore, the number of services provided to the customer was higher than in the rest of the cases. This may partly explain why the supplier's evaluations were more scattered in Case Infant. Nevertheless, in cases Maturity and Youth, the number of services judged and available was 8, compared to 12 in Case Infant.

10.5 Cross-Services Analysis of Customer Satisfaction and Loyalty with Respect to Services

In this chapter, individual services are analysed in terms of customer satisfaction and loyalty. This section presents the individual services point of view. In some interviews, the interviewer felt that the interviewee was confusing customer satisfaction and customer loyalty. For example, a person could have described how a service was a necessity for the customer. However, rather than rating customer loyalty high, the person rated customer satisfaction high and customer loyalty considerably lower. In such cases, the person's response was double-checked. The data of the study were recorded exactly as provided by the interviewees. In the interviews, several persons clearly stated that they did not want to evaluate a service if they felt that they were not aware or did not have enough knowledge of what was going on with a particular service. Case Birth has not been included in the overall ratings of the services, as services had not been delivered to customer Birth, and no customer responses were available. The services are presented in Figure 52 to Figure 57, in Figure 58 to Figure 63 and in Table 37. In Chapter 4.7.3 (Delivered Services), each of the services has been explained in more detail.

Because of the limited number of individual scores given by the interviewees for the services, no attempt was made to create a curve to find out the exact shape of the service in a mathematical form. Instead, attention was devoted to discovering those characteristics that may exist in the case of these various services. It was generally felt that the responses given by the customer relating to Case Child were likely to be slightly more critical compared to the rest of the customers. Reasons for this can be related to the cultural issues, individual persons, and their styles on giving feedback.

Starting from Figure 58 through Figure 63, the services are presented in classes. Satisfaction scores have been divided into three categories. The first category includes very dissatisfied scores from 0 to 4. The second category includes scores from 4.5 to 7.5. The third category includes very satisfied scores from 8 to 10. The presented loyalty score is an average of the given loyalty scores within the group.



Figure 52. Customer satisfaction-loyalty matrix for service A



Figure 55. Customer satisfaction-loyalty matrix for service D



Figure 53. Customer satisfaction-loyalty matrix for service B



Figure 56. Customer satisfaction-loyalty matrix for service E



Figure 54. Customer satisfaction-loyalty matrix for service C



Figure 57. Customer satisfaction-loyalty matrix for service F

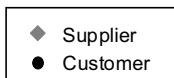




Figure 58. Customer satisfaction-loyalty classes for service A



Figure 61. Customer satisfaction-loyalty classes for service D



Figure 59. Customer satisfaction-loyalty classes for service B



Figure 62. Customer satisfaction-loyalty classes for service E



Figure 60. Customer satisfaction-loyalty classes for service C



Figure 63. Customer satisfaction-loyalty classes for service F

Table 37. Supplier's and customer's satisfaction and loyalty scores with respect to services in all cases

Service	Satisfaction		Loyalty	
Service A, entire sample	Supplier (n = 40)		Customer (n = 20)	
Mean	6.35	8.70	7.23	7.95
Standard deviation	1.71	1.29	1.31	2.21
Service B, entire sample	Supplier (n = 34)		Customer (n = 15)	
Mean	6.74	7.85	7.63	8.00
Standard deviation	1.83	2.07	1.45	1.81
Service C, entire sample	Supplier (n = 37)		Customer (n = 19)	
Mean	7.00	8.43	6.82	7.89
Standard deviation	1.41	1.36	2.00	2.76
Service D, entire sample	Supplier (n = 32)		Customer (n = 20)	
Mean	5.95	7.17	7.10	7.08
Standard deviation	1.85	1.63	1.54	2.88
Service E, entire sample	Supplier (n = 27)		Customer (n = 13)	
Mean	5.11	3.28	5.65	3.08
Standard deviation	1.94	2.45	2.55	2.57
Service F, entire sample	Supplier (n = 20)		Customer (n = 9)	
Mean	6.43	5.03	6.50	3.17
Standard deviation	2.00	3.08	2.00	2.45

10.5.1 Service A

When comparing customers' and suppliers' evaluations, it came out that the supplier (6.35) reported (Table 37) a lower level of customer satisfaction than the customer reported (7.23). Regarding customer loyalty, the supplier (8.70) reported higher scores than the customer did (7.95). The supplier reported clearly higher and the customer reported higher scores for customer loyalty than for customer satisfaction. In Figure 58, none of the customer's scores figured in the first category of satisfaction scores from 0 to 4. The higher the satisfaction class was, the higher scores were reported for customer loyalty by both the supplier and the customer. From the satisfaction classes, it can be seen that the customer gave lower customer loyalty scores in the same satisfaction classes as did the supplier. Customer loyalty remains high throughout all the classes, which can be interpreted as an indication of the captivity of the service. An explanation for the lower customer satisfaction average given by the supplier is the number of supplier scores appearing in the lowest customer satisfaction class.

An examination of Figure 52 reveals that only in the case of four individual scores was customer loyalty rated lower than customer satisfaction. The majority of the scores for customer loyalty are at least seven or more. These points quite clearly demonstrate that the nature of service A is somewhat captive. Based on the data, it is difficult to define the captivity of the service. Figure 52 indicates that a curve could be drawn using the plotted points that would show high customer loyalty, even with low customer satisfaction marks. This point also reinforces the assumption that this service would be one that the customer is nevertheless very likely to buy.

The supplier's and customer's points are quite close to each other. The customer's evaluation of loyalty is somewhat lower than the supplier's evaluation, whereas the supplier has given a lower rating for customer satisfaction. Generally it appears that the customers are relatively satisfied with the service. The evaluations of the interviewees did not differ markedly from case to case. The only difference was that three interviewees in Case Infant believed that the customer's loyalty to the service would be lower compared to the other cases. Those three scores are shown in the middle of Figure 52. In Case Maturity, customer satisfaction would improve if the customer had direct access to the experts of the supplier company. Frequently, the customer finds faults in the software, and only the supplier can make changes to the software.

10.5.2 Service B

When comparing customer and supplier, it came out that the supplier (6.74) reported (Table 37) a lower level of customer satisfaction than the customer reported (7.63). Regarding customer loyalty, the supplier (7.85) and the customer (8.00) reported much the same evaluations. The supplier and the customer reported higher scores for customer loyalty than for customer satisfaction. In Figure 59, the customer did not give a score in the first category of satisfaction scores from 0 to 4. The higher the satisfaction class was, the higher were the scores reported for customer loyalty by both the supplier and the customer. From the satisfaction classes, it can be seen that the customer gave slightly lower customer loyalty scores in the same satisfaction classes than did the supplier. Customer loyalty remains considerably high in two highest classes and medium in the lowest class, which indicates that the service could be a captive service. The supplier scores in the lowest customer satisfaction class may account for the lower customer satisfaction average given by the supplier. .

In general terms, this service is more likely to be a captive service that includes a forced loyalty element. The majority of the scores are in the top-right corner of the satisfaction-loyalty matrix, indicating at least a slight captive nature for the service. Customer persons supplied relatively more top ratings – eight or more – for customer satisfaction than the supplier persons. Five customer persons awarded 10 for customer loyalty. Customer satisfaction and loyalty for service B was rated very similarly in the different cases. In Case Infant, the customer's satisfaction with the service was more scattered than in the other cases. The customer's loyalty in Case Infant could be regarded as slightly lower than in the other cases.

The total sample for Figure 53 was 49. The lowest scores that customers awarded for customer satisfaction and loyalty are five. All the customer scores are in the top-right corner of the satisfaction-loyalty matrix. Based on that observation, the customer is relatively satisfied with the service in general and quite likely to purchase it again in the future.

10.5.3 Service C

When comparing customer and supplier, it came out that the supplier (7.00) reported (Table 37) a slightly higher level of customer satisfaction than the customer reported (6.82). The comparison of customer loyalty scores showed that the supplier (8.43) reported a slightly higher score than did the customer (7.89). The supplier and the customer reported higher scores for customer loyalty than for customer satisfaction. In Figure 60, the higher the satisfaction class was the higher scores were reported for customer loyalty by both the supplier and the customer. The customer gave clearly lower customer loyalty scores in the lowest satisfaction class, lower scores in the middle satisfaction class and slightly higher scores in the highest satisfaction class than the supplier. According to the supplier, customer loyalty remains considerably high throughout the satisfaction classes. According to the customer, customer loyalty remains considerably high in two highest satisfaction classes and medium in the lowest satisfaction class. This indicates that the service is likely to be a captive service.

The vast majority of the scores are located in the top-right corner of the matrix, which indicates that the supplier and the customer presume that the customer would be satisfied with and loyal to the service C. There are altogether six individuals, whose scores were not in the top-right corner. Service C is also considered a service with a captive satisfaction-loyalty curve. The exact shape of the curve is difficult to estimate, particularly as the lower customer satisfaction scores are very low in numbers. Service C was rated very similarly in terms of customer satisfaction and loyalty throughout the cases. In Case Child, the customer had a split view on their satisfaction and loyalty, and in Case Maturity there were a couple of opinions that were slightly on the lower side. Other than that, however, service C was scored similarly. Based on the cross-case analysis, one can assume the likelihood of the customer's repurchasing the service to be high. Moreover, the customer comment below confirms the finding:

In service C, illustrated in Figure 54, the size of the entire sample was 56. Few customer persons were dissatisfied with the service. Two customer persons awarded one or less for customer loyalty,

which could be interpreted as an indication of repurchase likelihood below 10 per cent. Apart from those two persons, all the other customer persons awarded at least six for customer loyalty. On the whole, service C received more tens for customer loyalty than any other service. Altogether, six customer persons and seven supplier persons reported a ten for customer loyalty, which represents 23 per cent of the entire sample. The proportion of the customers who awarded ten for loyalty was 32 per cent. As for customer satisfaction, 23 persons awarded at least eight, which represents 41 per cent of the entire sample. These relative numbers are the highest of all the services studied in this research.

Service C is a service that the customer must have. (Customer Infant)

10.5.4 Service D

When comparing customer and supplier, it came out that the supplier (5.95) reported (Table 37) a lower level of customer satisfaction than the customer reported (7.10). Regarding customer loyalty, the supplier (7.17) and the customer (7.08) reported very similar evaluations. The supplier reported higher scores for customer loyalty than for customer satisfaction. The customer reported a similar evaluation for both customer satisfaction and customer loyalty. In Figure 61, the higher the satisfaction class was, the higher were the scores reported for customer loyalty by both the supplier and the customer. The customer gave clearly lower scores in the two lower satisfaction classes and higher scores in the highest satisfaction class than the supplier did. According to the supplier, customer loyalty remains high throughout the satisfaction classes. According to the customer, customer loyalty remains medium in the two lower satisfaction classes and considerably high in the highest satisfaction class.

Figure 55 shows that a large number of individual scores are scattered around the diagonal starting from (0, 0) and ending to (10, 10). Two customer persons awarded two or less for customer loyalty, which is a clear indication that those persons are unlikely to repurchase the service from the supplier. Only one customer reported less than a five for customer satisfaction; therefore, only a few customer persons can be considered truly dissatisfied with service D. Most of the scores are in the top-right corner of the matrix. Service D received four tens from the customer and one ten from the supplier for customer loyalty. 27 persons have similarly given high loyalty ratings, at least eight or higher for customer loyalty to the service, which represents 52 per cent of total answers.

As many of the customer's scores are on the diagonal or in the immediate neighbourhood of the diagonal, it is reasonable to assume that service D is less captive than services A, B and C. The large number of high loyalty ratings suggest that service D would also be somewhat captive in its nature. Service D was evaluated similarly in cases Maturity, Youth, and Infant, but in Case Child the scores differed from the other cases. In Case Child, the scores were somewhat scattered. Cases Maturity, Youth, and Infant indicate a slight captivity associated with the service, whereas based on Case Child, predictions would be difficult.

10.5.5 Service E

When comparing customer and supplier, it came out that the supplier (5.11) reported (Table 37) a slightly lower level of customer satisfaction than the customer reported (5.65). Regarding customer loyalty, the supplier (3.28) and the customer (3.08) reported very similar evaluations. The supplier and the customer reported considerably lower scores for customer loyalty than for customer satisfaction. In Figure 62, both the supplier and the customer gave higher customer loyalty scores for the middle satisfaction class compared to the lowest satisfaction class, but the scores for the highest satisfaction class were lower than for the middle satisfaction class. The differences between the scores in the middle and in the highest satisfaction classes are small. The number of scores given in the highest satisfaction class is quite small. Both the supplier and the customer gave low scores for customer loyalty in the lowest satisfaction class and medium scores in the two higher satisfaction classes. The customer gave higher customer loyalty scores in the two higher satisfaction classes than the supplier did. Consequently, the service appears to be of a competitive type.

The summary of service E has been gathered from various services that are thought to relate to that particular area of service. Even though the variation in each of the cases can be different, the services are alike enough to allow combining them into the same matrix, as in Figure 56. The services can be judged to represent different magnitudes of services E varying from full scale to limited scale and consequently the services have been marketed under various names.

Service E is quite complicated, as the cases were all different. In Case Infant, the customer was clearly dissatisfied. In Case Child, the scores were quite spread and the case does not provide a single answer. In Case Youth, customer satisfaction is higher than in Case Infant and the customer loyalty has similarly improved a little. In Case Maturity, there is not enough data for analysis. It appears that the differences in service E could not be explained by the product life cycle curve. The supplier's capabilities of providing service E varies from country to country, and customer's needs vary according to, for example, the competition and customer's activities in the market place. Generally, service E appears to be a service the customer is not likely to purchase if the customer is not convinced that they would be satisfied with the service.

The maturity of the network can be one explanatory factor for the importance of the service. However, there may be another factor. In cases Birth and Infant, the customer did not have their own function to perform service E, whereas in the other cases, such functions had been established. The supplier did not see a realistic chance to take over their existing function from the customer's organisation. In Case Birth, the building of the network had not started and planning was in its initial stages, so there was an apparent need for service E. In Case Infant, the customer just had decided no longer to purchase the service from the supplier. Therefore, it is quite logical that they announced that they were not going to re-purchase the service from the supplier and concentrated rating those services that were important for them when purchasing services from the supplier. Based on the interviews, the customer regarded service E as important, but would not purchase it from the supplier.

Precisely half of the scores are located in the bottom-left corner of the satisfaction-loyalty matrix. Service E must be regarded as a competitive service where customers have options and they also use their right to choose. The precise shape of the curve is difficult to estimate, particularly as the scores in different cases were located in different parts of the satisfaction scale. Therefore, drawing an exact curve would require more data, but generally the satisfaction-loyalty curve is competitive in nature. In service E, there were only six supplier persons who thought that the loyalty of the customer would be higher than their satisfaction. All of the customers gave the same or a lower score for customer loyalty than for customer satisfaction. This fact demonstrates clearly how different service E is in nature in comparison to the earlier services A, B, C, and D. Service E is the only service of the cross-case section to receive zero for customer loyalty. Two customer persons and three supplier persons awarded zeros for loyalty, all of which were given in Case Infant, where the customer was dissatisfied with the service. The customer had defected from service E in Case Infant and even discussions on smaller scale service E projects were thought unlikely by some of the interviewees. Several researchers such as Reichheld and Sasser (1990), Zeithaml *et al.* (1996), and Peck (1997) advise companies to utilise defected customers. According to them, defected customers can be used as an early warning signal. Therefore the customer should be interviewed about the reasons they left the supplier in service E.

10.5.6 Service F

When comparing customer and supplier, it came out that the supplier (6.43) and the customer (6.50) reported (Table 37) very similar evaluations for customer satisfaction. Regarding customer loyalty, the supplier (5.03) reported clearly higher scores than the customer did (3.17). The supplier and the customer reported clearly lower scores for customer loyalty than for customer satisfaction. In Figure 63, both the supplier and the customer gave higher customer loyalty scores for the middle satisfaction class compared to the lowest satisfaction class, but the scores for the highest satisfaction class were lower than for the middle satisfaction class. The customer gave lower customer loyalty scores than the supplier did in all the satisfaction classes. The difference between the scores in the middle and in the highest satisfaction classes can be explained by the changing nature of the service. Early in the life cycle, the service is less competitive by its nature than later on.

This is reflected in the deviation of scores in different cases. Both the supplier and the customer gave low scores for customer loyalty in the lowest satisfaction class and medium scores in the middle satisfaction class. In the highest satisfaction class, the supplier gave medium scores for customer loyalty, whereas the customer gave low scores. Consequently, the service appears to be more of a competitive type.

The shape of the customer satisfaction-loyalty curve seems to depend on the stage that the customer is at their product life cycle curve. In the early phases, the customer needs service F quite a lot, and the curve seems to depend considerably on how satisfied the customers are with the service. The customer will make their decision based on their satisfaction. The relationship between satisfaction and loyalty seems to be relatively close; i.e. customer satisfaction and loyalty scores are similar. However, as the customer subsequently matures, their needs change and their dependency on the service decreases to such an extent that, even if the customer perceives they would be satisfied with the service, they are unwilling to purchase the service. The change in the customer's attitude can be the best interpreted from the qualitative feedback, where in the later stages service F had become a way to supplement missing resources. Therefore, it is assumed that the customer satisfaction-loyalty curves changes over time from a slightly captive curve to a very competitive curve later on.

The factor between Case Infant and cases Maturity, Child, and Youth is the fact that the customer in Case Infant was a rather new operator. The scores of Case Infant are located mainly in the top-right corner of the matrix. Customer Infant required some support from its supplier, as the customer did not have adequate experienced resources. Therefore, the customer's likelihood of purchasing the service was relatively high. In the remaining cases Maturity, Child, and Youth, service F was evaluated similarly, and customer loyalty was evaluated lower than in Case Infant. In Case Maturity, the customer felt that they did not need the service at all and no customer person evaluated the service.

In Case Birth, service F was recognised as the most important services for the customer. In cases Infant and Child, the supplier recognised that service F represents a service that is important for the customer. In cases Youth and Maturity, no customer or supplier persons nominated service F among the most important services. Consequently, the customer's need for the service reduces the more mature the customer becomes. In later phases, the customer has no need for service F, except to supplement their own resources for certain peak loads in their own operations.

In service F, the scores seem to be mainly located either into apostle or mercenary quartiles. Service F consists of services F and F₂. Analysing service F is difficult if the experience of the customer is be taken into account. Service F₂ can be considered a typical service in a large scope care phase. Service F₂ was delivered to the customer only in Case Infant, in order to enable comparisons, service F₂ was linked to service F, which was close to it. Figure 57 has no data relating to service F₂. Service F₂ is regarded as a relatively important service for the customer if the scope of the works is large. As the service is quite labour-intensive, its demand depends additionally on the customer's set-up, whether the customer has the necessary resources or not. As service F₂ was not delivered as an individual service in the rest of the cases, it is difficult to predict how the service would be recognised in the later phases. Further study of this service may provide some insight to the characteristics of the service.

10.5.7 Other Services

Certain other services were additionally evaluated by the interviewees, but the data for those services were more limited. A comparison of the other services among different cases would not provide a great deal of information as the services were provided only in a limited number of cases. The remaining services are listed in Table 38. The large number of services from Case Infant is due to the larger scope of the services.

Table 38. Other judged services

Service	Cases
Service G	Youth, Birth
Service H	Youth
Service I	Infant
Service J	Infant
Service K	Infant
Internet Solutions	Maturity, Infant

Service G

Service G was judged in cases Youth and Birth, but there is no customer data available relating to Case Birth, and the data for the service were quite limited. One supplier's person in Case Youth nominated service G as one of the two most important services. On customer satisfaction, the supplier and the customer seemed to have similar opinions, but on customer loyalty, the supplier had much higher expectations than the customer did. From the customer's perspective, the service seemed to be very much a service that they do not have to purchase; therefore one could consider the service competitive in nature.

Service H

Service H was available only in Case Youth. It cannot be directly compared with any other services. This service is related with service A. The data from the service can be quite well explained by the nature of service A. The customer was clearly dissatisfied with the service, but was still forced to purchase it. The data can be categorised as belonging to the top-left quartile. This was also recognised by the customer.

Service I

Service I is a service to be provided if the supplier is responsible for a larger scope of care phase activities. As noted already, in the most important services there is a mismatch between the customer's and the supplier's perceptions. The same applies to the satisfaction and loyalty scores. The customer and the supplier have very different evaluations on the service. In the present study, the reason for the differences was not determined. As the other customer's in the study did not use the service, the nature of the service is difficult to judge. Therefore, the form of the customer satisfaction-loyalty curve is similarly difficult to predict.

Service J

Service J is a service that can be provided in larger scope deliveries of care phase services. In the most important services, some supplier persons recognised the service, but no customer persons identified it. In customer satisfaction and loyalty scores, the supplier rated both satisfaction and loyalty considerably higher than the customer did. This demonstrates that the customer and the supplier are likely to have different perceptions on the service. There was no other customer in the study that would have purchased the service. Therefore, the form of the customer satisfaction-loyalty curve is not predicted.

Service K

Service K was a service that was rated only in Case Infant. This service was a product of the supplier's wider responsibilities in the care phase. The customer and the supplier gave different evaluations of customer's satisfaction and loyalty for the service, as the supplier produced higher scores for the service. As the data for the service comes only from one case, one should not try to predict the form of the satisfaction-loyalty curve.

As service K was not rated among the most important service, it would be reasonable to conclude that this service would not be an important service for the customer. This service is nevertheless responsible for a great deal of the care phase, and the mobile user sees the results; therefore, that

kind of conclusion is unlikely to be accurate. Perhaps the importance of the service has not developed yet. The reasons for customer's behaviour not rating the service higher would be an interesting subject for further research.

Internet Solutions

Rajalahti (2000), in her interview of Porra, concludes that the Internet makes the customer impatient. A perceived challenge of the Internet is how to make the customer return. It can be seen that the impatience of the consumers will also spread to business-to-business commerce. Data on Internet solutions were limited; some interviewees did not rate the service in cases Maturity and Infant. Internet solutions were not rated or discussed in cases Child and Youth, as rating was not considered feasible as the service had been in use for such a short period.

Based on cases Infant and Maturity, it could be assumed that the importance of the service would slightly increase as the customer's network matures. Another explanation for the importance can be differences in the customers' focus. In Case Maturity, the customer was more concerned with bringing more advanced services and technologies to the market for the mobile users. Customer A had a need to communicate and share information more effectively with the supplier because of the larger size of the customer organisation in Case Maturity. In the interview, it was noticed that for Case Maturity, Internet solutions were seen as a more concrete phenomenon, whereas in Case Infant the customer felt that the Internet will become more important in the future. Data in cases Maturity and Infant were so limited that no predictions on the customer satisfaction-loyalty curve were made.

10.5.8 Observations on the Services

It was noted that no customer or supplier interviewees scored (0, 0), and only one scored (10, 10) for any of the evaluated services, although tens or nulls were awarded for customer loyalty. This is interesting, as it could indicate that the interviewees did not use the full-scale from null to ten. Further research could also be conducted on studying the behaviour of the interviewees when asked to complete a customer satisfaction and loyalty matrix.

Customer Infant's differing opinions compared to cases Maturity, Child, and Youth can partly be explained by the differing priorities regarding the services. The priorities of customers Maturity, Child, and Youth were almost the same. In Case Infant, the customer's needs could be different because of the newer operations; therefore the customer needs to purchase different services than the more established customers. Case Infant's more widespread scores for customer satisfaction can partly be due to same thing: customer's and supplier's operations for the customer are rather new and they are still developing, which could be seen as reflecting more inconsistent services.

Services A, B, and C all can be categorised as services that the customer more or less must purchase for the present. Customers were considered relatively satisfied with the services in the current circumstances. In telecommunications, there is always a risk of technological discontinuities. Based on this research, it is not clear whether the service provided to the customers was good or whether the customers had accepted the current service levels as an acceptable standard for the current technology, but that they would expect more if the market was more competitive.

In service D, there appears to be a constant need for the customers to purchase the service. As the supplier is the main source of providing the service, it has an edge, but self-provisioning is also an option for the customer. Some customers had also used self-provisioning at some stage.

Service E demonstrates that, in the case of a defected customer, the full loyalty scale was used. In Case Infant, where the customer had defected, the individual scores had moved towards the bottom-left corner. One might question if customer defection is the only situation when the whole scale is employed, as the other cases produced higher scores for customer satisfaction, although the loyalty figures remained low. The nature of service E was considered competitive.

Service F produced evidence that the nature of the service could change with the life cycle of the customer. In the early stages, the customer is more likely to purchase the service, whereas later on,

the customer's repurchasing intentions clearly dropped. These six services that were more thoroughly covered produced evidence that the services in the care phase had different characteristics. As services A, B, C, and D were services the customer was likely to purchase, and service E an example of a competitive service, those five services also represented services that were rather static in the eyes of the customer when it comes to purchasing. On the other hand, service F appears to be a service that dynamically changes as the customer's needs change.

10.6 Central Persons vs. the Entire Samples

One of the initial hypotheses was that the central persons possess a better knowledge or perception of the customer, customer satisfaction, and loyalty with regard to services. Therefore, an attempt was made to study the central persons. The idea of the comparison between central persons and the entire samples was to find out if the central persons' attitudes would differ from the other employees, and it was expected that the central persons would be closer to each other. The central persons and the entire samples were compared with each other using the scores they had given for the individual services for customer satisfaction and loyalty. The comparison was carried out in a way that is demonstrated in Figure 64.

Table 39 shows the absolute differences between the means of the customer sample and the supplier sample compared with the absolute differences between the means of the customer's and supplier's central persons for different services. Table 39 shows the results of the comparison between the entire samples compared with the central persons. If the difference between the central persons is less than the difference between the entire samples of the customer and supplier, it is marked by a "+" sign. If the difference of the central persons is larger than the difference between the entire samples of the customer and supplier, it has been marked with a "-" sign. If the difference is less than 0.25 in absolute terms, then the difference is evaluated as null, as this small margin can be explained by error margins. In Table 39, the abbreviation "S" stands for customer satisfaction and "L" is stands for customer loyalty. Case Birth was not included in this comparison as there is no customer data.

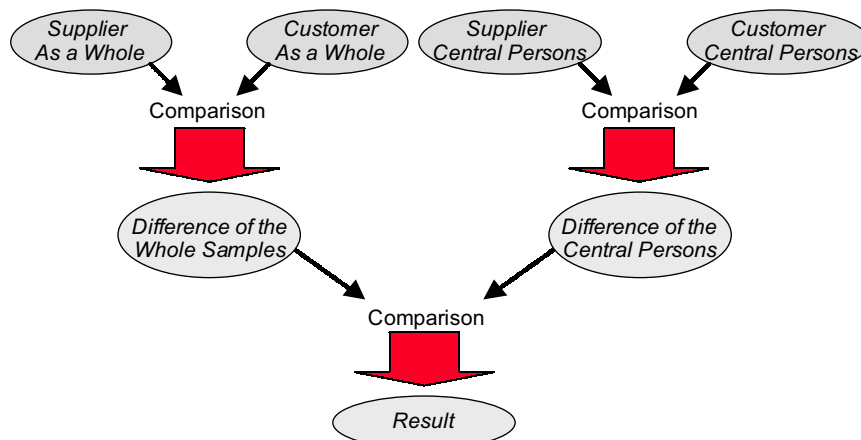


Figure 64. Comparison of the central persons with the entire samples

An important fact to be noted is that the customer and the customer's central persons in cases Child and Infant were the same. Therefore, in those cases just the supplier and its central persons were compared with each other.

Table 39. Comparison of opinions of the central persons with the entire samples¹⁵

Cases Services	Infant		Child		Youth		Maturity	
	S	L	S	L	S	L	S	L
Service A	0	0	+	-	-	0	-	0
Service B	+	0	+	-	-	0	+	0
Service C	0	+	+	-	0	-	-	-
Service D	0	-	-	-	-	-	0	+
Service E	+	-	-	-	+	-		
Service I	0	-						
Service J	0	0						
Service F	0	0			0	0		
Service F ₂	0	+						

The evaluation of Table 39 was simplified to the format of Table 40.

Table 40. Comparison of opinions of the central persons with the entire samples¹⁶

Cases Services	Infant	Child	Youth	Maturity
Service A	0	0	-	-
Service B	+	0	-	+
Service C	+	0	-	-
Service D	-	-	-	+
Service E	0	-	0	
Service I	-			
Service J	0			
Service F	0		0	
Service F ₂	+			

In Case Infant, the central persons were closer to each other in three services than the supplier and the customer as a whole. In two services, the central persons were further away from each other than the supplier and the customer as a whole. In the remaining four services, the differences between the central persons and the entire samples were not large enough, and the services were identified as neutral.

In Case Child, the central persons were further away from each other in two services, service D and service E, than the supplier and the customer as a whole. Services A, B, and C were judged to be neutral because in satisfaction the central persons were closer to each other whereas in loyalty they were further away. In Case Youth, the central persons were further away from each other than the supplier and the customer as a whole in four services, and two of the services were judged as indifferent. In Case Maturity, the central persons were further away from each other in services A and C than the supplier and the customer as a whole, and in the remaining two services the central persons were considered to have been closer to each other.

Based on the findings of the cases, it is concluded that the central persons' opinions cannot be said to be closer to each other than the opinions of the customer and supplier personnel. None of the cases suggests that the central persons would be closer to each other than are the supplier and the customer.

¹⁵ "+" indicates that the central persons are closer to each other than the supplier and customer. "0" indicates that the central persons and entire samples are about as close to each other. "-" indicates that the central persons are further away from each other than the supplier and the customer.

¹⁶ Table 40 is derived from the Table 39. In the Table 40 the satisfaction and loyalty values of the Table 39 have been combined into one value for each of the services. In case the "+" or "-"-signs were given for the customer satisfaction and loyalty, the sign remained the same. In case either satisfaction or loyalty was "0" and the other sign was "+" or "-"-sign, the service was judged as "+" or "-"-, as "0" was interpreted as neutral, which did not have an effect. If the two signs were "+" and "-"-signs, they neutralised each other and the outcome was "0".

Table 41 shows the results of the comparison of the differences between the whole supplier and the customer's central persons with the differences between the central persons of the supplier and the central persons of the customer in different cases. The comparisons were carried out using the method described in Figure 64.

Table 41. Comparison of opinions of the supplier and supplier's central persons with the customer's central persons¹⁷

Cases Services	Infant		Child		Youth		Maturity	
	S	L	S	L	S	L	S	L
Service A	0	0	+	-	-	0	-	0
Service B	+	0	+	-	-	0	0	0
Service C	0	+	+	-	0	-	-	0
Service D	0	-	-	-	-	-	0	0
Service E	+	-	-	-	+	-		
Service I	0	-						
Service J	0	0						
Service F	0	0			0	+		
Service F ₂	0	+						

The evaluation in Table 41 was simplified to the format of Table 42.

Table 42. Comparison of opinions of the supplier and supplier's central persons with the customer's central persons¹⁸

Cases Services	Infant	Child	Youth	Maturity
Service A	0	0	-	-
Service B	+	0	-	0
Service C	+	0	-	-
Service D	-	-	-	0
Service E	0	-	0	
Service I	-			
Service J	0			
Service F	0		+	
Service F ₂	+			

A comparison of Table 42 with Table 40 reveals the following differences: Case Youth in its service F and Case Maturity in its services B, C, and D. In cases Infant and Child, the tables are identical. In Case Youth, the supplier's central persons gained on the situation in service F and they seem to be a little better informed now. In Case Maturity, the supplier's central persons are further away in service C, and services B and D became neutral. As a summary of Table 42, the central persons of the supplier are no closer to the customer's central persons than the supplier on average.

A comparison between the whole supplier and the customer persons compared with that between the central persons of the supplier and the customer persons in different cases results in a table that is identical with Table 42. If the supplier's non-central personnel had been used, rather than the supplier as a whole, the situation would not have changed dramatically.

¹⁷ "+" indicates that the supplier's central persons are closer to customer's central persons than the supplier. "0" indicates that the supplier's central persons and the supplier are about as close to the customer's central persons. "-" indicates that the supplier's central persons are further away from the customer's central persons than the supplier.

¹⁸ Table 42 is derived from the Table 41. In the Table 42 the satisfaction and loyalty values of the Table 41 have been combined into one value for each of the services. In case the "+" or "-" –signs were given for the customer satisfaction and loyalty, the sign remained the same. In case either satisfaction or loyalty was "0" and the other sign was "+" or "-" –sign, the service was judged as "+" or "-", as "0" was interpreted as neutral, which did not have an effect. If the two signs were "+" and "-" –signs, they neutralised each other and the outcome was "0".

In the present study, some of the higher level persons in the supplier's organisation could not be interviewed. Access to some of the customer persons was similarly limited. This could mean that some of the central persons were missing and the results for the central persons could be biased to some extent. As the method used represented an attempt to keep certain persons and take out only those that were considered non-central persons, it can be assumed that the persons selected as central persons were nevertheless at least "more" central persons than those who were removed.

Further analysis did not suggest that the central persons would possess knowledge on the services that the other persons did not have. As the interviewed supplier's persons represent a relatively limited proportion of the supplier's personnel, it cannot be concluded that central persons generally could be more insightful about customer's perceptions. Nevertheless, in the context of the selected scope, interviewees, and central persons of the present study, the central persons did not have additional knowledge or information on the customers' and their satisfaction and loyalty that would have made them more insightful compared to the rest of the supplier's personnel.

10.7 Transition from the Optimism to Pessimism

When the development of pessimism and optimism in the supplier's attitudes are observed on a case and service basis, there can be seen substantial changes. If the customer rated customer satisfaction or customer loyalty as higher on average than the supplier it was marked as "+". If the customer rated the service lower than the supplier, it was marked with "-". If the answers were relatively close to each other they were given "0". Relatively close means that the absolute difference between the customer's and the supplier's averages is less or equal to one. The results of the comparison are presented in Table 43.

Table 43. The supplier's attitude to satisfaction and loyalty in care services compared to the customer's attitude

Cases Services	Infant		Child		Youth		Maturity	
	S	L	S	L	S	L	S	L
Service A	0	0	+	-	+	0	+	0
Service B	-	-	+	-	+	0	0	+
Service C	-	+	-	-	0	0	0	0
Service D	+	0	0	-	+	+	+	0
Service E	0	-	0	0	+	0	+	+
Service I	-	-						
Service J	-	-						
Service F	0	-	-	+	+	0		
Service F ₂	-	-						

The information in Table 43 was simplified to the format of Table 44.

Table 44. The supplier's attitude to satisfaction and loyalty in care services compared to the customer's attitude¹⁹

Cases Services	Infant	Child	Youth	Maturity
Service A	0	0	+	+
Service B	-	0	+	+
Service C	0	-	0	0
Service D	+	-	+	+
Service E	-	0	+	+
Service I	-			
Service J	-			
Service F	-	0	+	
Service F ₂	-			

Table 45 summarises the results of the supplier's attitudes in comparison to the customer's attitudes.

Table 45. The supplier's attitude to delivering services

Cases Supplier attitude	Used sign in the tables	Infant	Child	Youth	Maturity
Optimistic	"_"	6	2	0	0
Neutral	"0"	2	4	1	1
Pessimistic	"+"	1	0	5	4

As Case Infant shows, the supplier can be judged very optimistic about four of their services and optimistic on two services. In two of the services, services A and C, the supplier was quite close to the customer's opinions, and in service D the supplier was pessimistic. In service E, three separate services were considered when Case Infant was examined. In all three services, Case Infant can be interpreted to be either optimistic or very optimistic. In service F, two individual services were considered to belong to the service. The supplier was considered to have been clearly more optimistic about its services compared to the customer. In Case Child, the supplier was overly optimistic about two of their services, services C and D. Service C was considered an important service by the customer. In four of the services, services A, C, E, and F, the supplier's evaluation was quite close to the customer's evaluations. Regarding two of these four services, the supplier seemed to have slightly optimistic opinions compared to the customer. In Case Child, the most critical customer evaluation had an effect on two services in the overall grading. Nevertheless, it was decided to use the scores provided by this person, as there is no proof that he did not rate the services fairly. In Case Youth, there were no services whereby the supplier had an optimistic view about their services. In service C, the customer evaluation and supplier evaluation were close to each other, and service was regarded as neutral. However, in the remaining services, the supplier was pessimistic compared to the customer. This pessimism was mainly concentrated in customer satisfaction, which was rated lower by the supplier in all of those five cases. Finally, in Case Maturity, the supplier was not optimistic about any service. The supplier and the customer had similar opinions only with regard to service C. In the remaining four services, the supplier turned out to be pessimistic. In service E, the supplier was overly pessimistic, but in service E the data were limited.

As different care phase services were observed, a trend could be seen among different cases and services. In Case Infant, the supplier's attitude was generally optimistic about the supplier's capabilities with regard to customer satisfaction and customer loyalty. In Case Child, the evaluations

¹⁹ Table 44 is derived from the Table 43. In the Table 44 the satisfaction and loyalty values of the Table 43 have been combined into one value for each of the services. In case the "+" or "-" –signs were given for the customer satisfaction and loyalty, the sign remained the same. In case either satisfaction or loyalty was "0" and the other sign was "+" or "-" –sign, the service was judged as "+" or "-", as "0" was interpreted as neutral, which did not have an effect. If the two signs were "+" and "-" –signs, they neutralised each other and the outcome was "0".

of the customer and the supplier were in several cases different. The supplier's evaluation of customer loyalty was too optimistic and too pessimistic with regard to customer satisfaction. In Case Youth, the supplier's opinions had changed to mostly too negative regarding the supplier's capabilities. Case Maturity was very similar to the view of the supplier in Case Youth. Both cases Youth and Maturity were both firmly in the care phase. These cases demonstrate a trend whereby the supplier's attitudes change as a function of time from an optimistic approach gradually to a pessimistic approach when compared to the customer's attitudes on the same services. It seems that, as the network matures, the supplier becomes more and more overwhelmed by the increasing complexity of the issues and the number of different kinds of problems with the network, which brings a feeling that one cannot satisfy the customer well enough. That is then reflected as pessimism. Figure 65 demonstrates in relative terms the relative optimism and pessimism of the supplier in different cases.

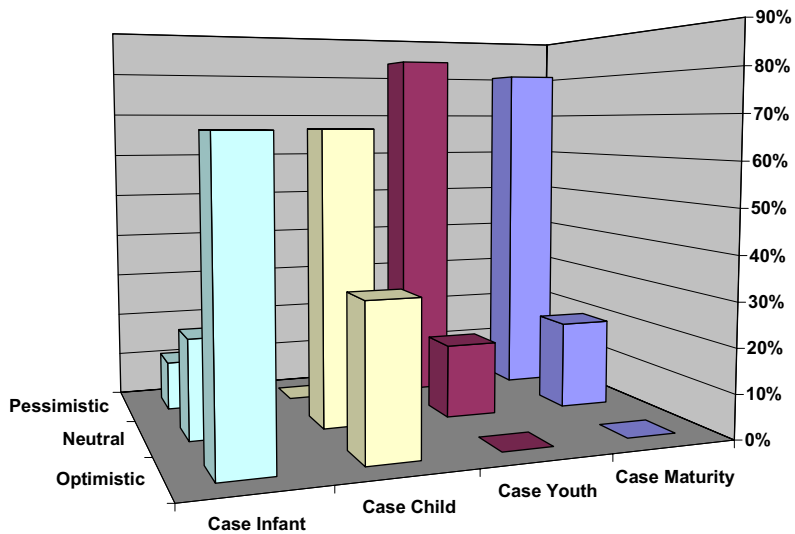


Figure 65. The supplier's attitude to delivering services

The same transition from optimism to pessimism that has been described here regarding all the cases can also be described by looking at the individual services and how the supplier's attitude to those services develops over time. In service A, a trend towards more pessimistic views can be detected as the supplier's customer becomes more experienced. In service B, the supplier was too optimistic in its approach in the early stages. As the customer becomes more experienced, the optimism of the supplier changes gradually to pessimism. In service C, the supplier had opinions from neutral to optimistic in earlier phases and, later on, the opinions were from neutral to slightly negative. In service D, the differences between cases were not very large. In service D, there is a slight trend whereby, in the later stages in the customer life cycle curve, the customer is more negative. In service E, one can see how the supplier's evaluation changed over time from being overly optimistic to overly negative about its service. In addition, in service F, the supplier's attitude towards its service changed over time from optimistic to pessimistic.

An explanation for this phenomenon may be that the supplier receives over time an increasing amount of feedback from the customer. In the care phase, the feedback from the customer is frequently about problematic situations, when quick actions are required and emotions can be high. As these things accumulate, the supplier's perception regarding the performance of the services can become increasingly sceptical.

In the later stages of the customer relationship, the supplier's personnel may develop a better understanding of the true customer needs. As the needs of the customer are better known the supplier believes that the supplier cannot fulfil all of the customer's needs. The supplier's fear of not

being able to meet customer's needs may lead to "overperformance" by the supplier in order to try to satisfy the customer. In the case of younger customers, their priorities are still changing. The resources are likely to be pinpointed to the actions that the customer demands. In the case of care phase, this can mean dedicating resources for actions that the customer has most recently complained about. This may lead to conflicts with the customer's "true" priorities regarding the services and with the customer's needs, of which the customer may not necessarily be fully aware (Peters, 1996).

Reasons for the differences in the opinions given by the customer and the supplier personnel can be partly explained by several factors. Many interviewees had problems with the identification of the content of the services. Many individuals, even those in decisive positions, were not familiar with the contents of the services. If one does not know what has been bought, then judging services fairly may be difficult. Nevertheless, these interviewed customer persons make buy or not-buy decisions and therefore, their views for the services were valid, while not necessarily objective. In certain cases, it seems that the customer has underestimated the customer loyalty scores. In cases Child and Infant, there were numerous differences and occasionally it was supplier that provided lower scores than the customer for loyalty. In a few interviews, the customer stated, particularly with regard to service A, that they could not live without the service, yet they provided rather low loyalty scores. On the other hand, in Case Infant, regarding service E, the supplier was optimistic about loyalty, although the customer had just defected from the service. In other services, such obvious mismatches between the customer's scores and their interviews were not encountered. Although the discussion has been concentrated around the supplier and comparisons of the supplier's opinion with the customer's, this does not necessarily constitute the whole picture. The customer could have stated their belief on loyalty, but they may have underestimated their true loyalty. From the supplier's point of view, the customer's opinion is a good yardstick, as the customer decides if they are going to repurchase the service. If the customer underestimates their loyalty, they may make their purchase decision based on their possibly wrong assumption. Thereafter they may decide to carry occurring extra costs or extra costs could possibly be realised only after the purchase has already been made.

10.8 Analysis of Customer Satisfaction and Loyalty towards the Supplier's Service Manager Concept

According to Brown (1992), frontline employees can predict with 90 per cent accuracy when and about what customers will complain. This can also be confirmed based on the present study's interviews. In the interviews, both the customer persons and supplier persons identified the same issues that they would consider as the most acute. The differences between supplier and customer opinions were then seen in quantitative terms whereby the customer and supplier persons could judge the same services very differently. Frequently, customers and employees say the same thing about a service problem. Customers and employees evaluate the company's recent performance similarly on dimensions that are important for the customers: ease of doing business, competence of service people, timeliness of the service, service representatives' availability, and interest displayed by service personnel in helping customers (Heskett *et al.*, 1997).

The care concept is very dependent on the service manager, as this mode of operations puts a great deal of focus on the service manager. It was noted that the concept is very vulnerable if the service manager is not as capable as the customer would need. In a few cases where the service manager has not been capable, it has been realised afterwards that things can go very wrong. (Customer)

One of the most common complaints by the customers in both consumer and business-to-business services are about changing customer-contact persons. Particularly, low employee turnover companies that grow fast are likely to rotate their employees around the company in order to promote customer-contact persons and manage growth. Traditionally, measures of employee turnover concentrate only on the costs of recruiting, hiring, and training replacements, but the real cost of turnover is the loss of productivity and decreased customer satisfaction (Griffin, 1995, Heskett *et al.*, 1994 and 1997).

10.8.1 The Role of the Service Manager

The service manager was rated only in cases Infant and Maturity. In the rest of the cases, it was agreed with the service managers that they would not be rated. The present study indicates that the importance of the service manager is greater for the more mature operators. Based on cases Infant and Maturity, the service manager appears to be an important service for the customer. More mature customers seem to appreciate the attention they get when a service manager has been allocated for them, as is seen in Table 34. The service manager is seen as a way to reach the supplier in an easier manner and speed up the progress with care phase related issues.

Account managers' duties (Wayland and Cole, 1997) include acting as a single point of contact, developing customer relationships, understanding customer's decision making, identifying business opportunities, providing competitive intelligence, negotiating sales, and orchestrating customer service. In practice, the customers of the present study expected those qualities from the service manager, but in some of cases that was not quite what the service managers were officially expected to do.

Earlier the supplier was seeking people possessing technical competencies when filling the service manager's position. Nowadays it is realised that in addition relationship management skills and of the ability to handle customer relationships are required. (Supplier)

If the customer dislikes the idea of an account manager or a sales person, which was the case in a few interviews, missionary salespeople or detail people, as they are called in drug industry may be a better choice for a responsible person for the care phase. They are commonly used by companies to provide specialised services and cultivate customer goodwill. These persons generally do not try to secure orders (Hartley, 1989). A number of factors have an influence on the successful operation of the service manager concept. Establishing physical barriers increases the customer's loyalty and also visibly adds value for the customer, an example of which is a full-time company representative, the service manager, at the customer's premises (Griffin, 1995). Services provided should be promoted internally and to the customers (Friday and Cotts, 1995). If the service manager is responsible for achieving an objective, that person should be given the necessary authority to achieve it (Patton, 1980).

Table 46. Background information on service managers

Cases	Birth	Infant	Child	Youth	Maturity
Trained	x	x	not	x	x
Advanced Training	not	not	not	x	x
Works still as a service manager	x	not	x	x	x

Table 46 provides additional information on the service managers of the studied cases. All except the service manager of Case Child had gone through the basic training available for the service manager's position. The service managers of cases Youth and Maturity had participated in the advanced training targeted at the more experienced service managers of the supplier. The service manager of Case Child had previously had similar training and therefore he did not participate in the basic or advanced training. 12 months after the interviews were conducted four service managers were still working with the same customer; the service manager of Case Infant resigned shortly after the interviews. The differences between the cases cannot be explained by the backgrounds of the service managers. The resignation of the service manager in Case Infant is interesting, as the customer was already partly defected and the service manager was nominated by the customer as one of the satisfaction factors for the customer in some customer interviews. Therefore, from the customer's point of view, losing the service manager was unfortunate. Based on the qualitative parts of the interviews, of the five service managers the service manager of Case Infant was the unhappiest with his situation. There seems to be a link with the figure Motivational spiral on page 26.

In order to create a successful design, front line employees must be involved with product development. However, as in the case of the service manager, it still remains an unutilised part of the design function. Utilising the service manager more for the design of the products is currently an under-utilised area.

10.8.2 The Service Manager's Attitude

In order to discover whether the service managers, who are responsible for the care phase business, would be more knowledgeable about their customer's situation, an analysis was conducted on how close the service manager's scores were to the customer's averages in relation to different services. Service managers were compared with the customer as a whole.

The results of the analysis were scaled. If the score given by the service manager for an individual service did not differ from the customer's average by more than one, it was regarded as "close". If the difference from the customer's average was more than one, but not more than two, the score was considered "neutral". Otherwise, the score was considered "far" from the customer. This grading was used both in Figure 66 and Figure 67. Service managers were compared with those averages given by the customer in the services evaluated by the service manager.

In Figure 66, the difference between the service manager and the customer as average is presented in relative terms with regard to customer satisfaction. In Case Infant, the service manager knew little of how the customer felt about the services delivered in the care phase (Figure 66). However, in the other cases, where the customers were already more clearly in the care phase, the service manager's perception of the customer's satisfaction had improved and was very well aligned with the customer's scores. On the whole, the supplier's service managers had a good understanding of the customer's satisfaction with the care phase services. In cases Child and Maturity, the service managers were closer to the customer's averages than was the supplier's average.

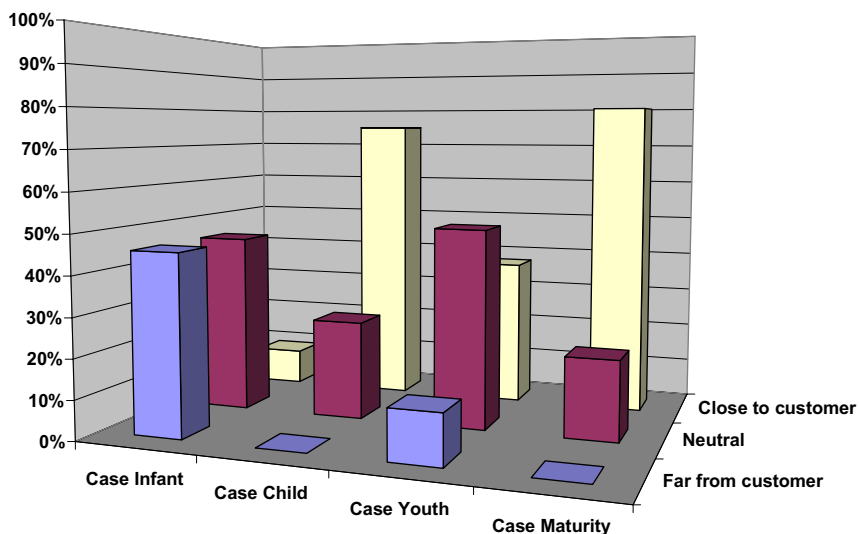


Figure 66. The service manager's attitude towards the customer with regard to customer satisfaction

Figure 67 presents in relative terms the difference between the service managers and the customer's average with regard to customer loyalty. In all cases except Case Youth, the service managers were not close to the customers' evaluations of customer loyalty (Figure 67). In Case Youth, the scores can be split into good matches and bad matches. In general terms, the service

managers were far from the customers' perceptions in almost half of the services in the studied four cases. In Case Child, the service manager was far more optimistic about re-selling the services. In all of the services, the service manager reported a high score for customer loyalty, as he thought the customer would buy those services, and afterwards the customer did buy those services. In Case Maturity, the service manager had drifted away from the scores given by the customer more than had the supplier's.

The supplier's service managers' understanding of the customer's loyalty does not match the scores given by the customer with regard to the care phase services. This phenomenon is quite interesting, as the service managers could be expected to be capable of estimating the customer's loyalty accurately, as they know fairly well how satisfied the customer is with the supplier's services.

Based on Case Child, one could also assume that the service manager predicted the future better than the customer did and that the customer's replies would have been biased. However, in the other cases, some far away answers were also below the scores given by the customer. In Case Infant, the customer loyalty in all four services was "far" above the customer's average. In Case Youth, the customer loyalty in one out of three services that were "far" from the customer's average was below customer's average. In Case Maturity the only service "far" in the customer loyalty had been evaluated below the customer's score. Based on this data, for these findings a more logical explanation may be the transition of the supplier from optimism to pessimism.

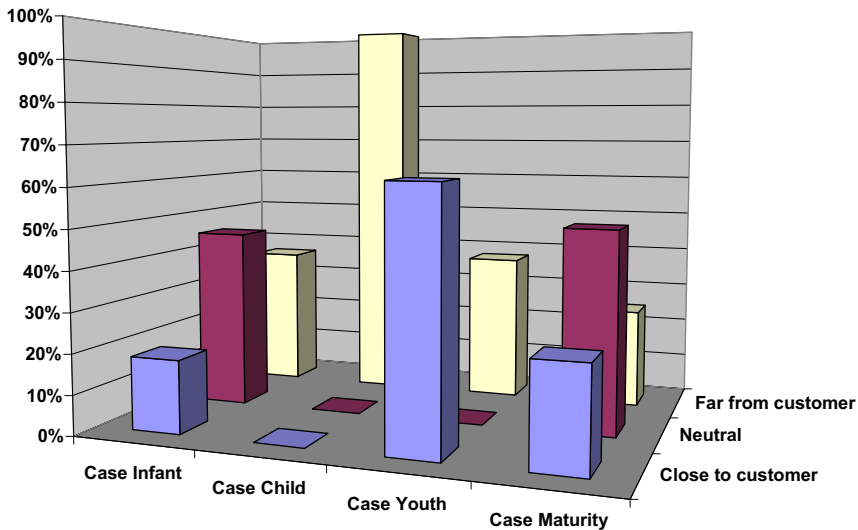


Figure 67. The service manager's attitude towards customer with regard to customer loyalty

10.8.3 Persons Influencing Service Managers

Here, the main findings of the comparisons of the service manager with the supplier's average, the supplier's central persons, the customer's average, and the customer's central persons are presented. Service managers' opinions were compared with certain specially identified persons. This section primarily relies on the service manager's own word about with whom he was communicating and the other identified party in the communication has been used as a secondary information source.

In Case Infant, the service manager was incorrect about the customer's preferences about the two most important services as anybody from the supplier side was. In scoring individual services, the service manager was very positive about the supplier's services and the possibilities of reselling the

services to the customer in the future, throughout all the services. In the customer organisation, one central person was identified as a very important opinion maker in the customer organisation for care phase related issues. The service manager was close to his opinions in services D, F, F₂, I, K, and the service manager. In Case Child, the service manager evaluated the importance of the services exactly as the customer did. In services A and C, which were identified as the two most important services overall, the service manager was relatively close to the customer persons with regard to customer satisfaction. It was noted that in all of the services a person considered perhaps the most important person from the customer side was close to the service manager's opinions on customer satisfaction. As regards customer loyalty, the service manager had a differing evaluation, which has turned out to be reality. In Case Youth, the service manager identified as the two most important services the same services as the customer. Based on the customer's answers, one individual customer person was identified who communicated frequently with the service manager. This person and the service manager evaluated similarly six services of eight services studied. The service manager can be considered, in two services at least, as close to the customer's evaluations as the rest of the supplier's personnel. In two other services, the service manager was closer to the customer both in customer satisfaction and loyalty. In four of the services, the service manager's scores were further away from the customer than the supplier's average. In Case Maturity, the service manager identified as the two most important the same services as the customer. There were two persons identified as persons the service manager was in more frequent contacts than with the rest. The service manager was very close to the opinions of those two persons in four of the services that they all evaluated. In all of the services, the service manager's scores for customer satisfaction or loyalty were lower than the customer scores. In the most important service, service A, the service manager was closer to the customer's evaluation of the service than the supplier was. In two services, the service manager was relatively close to the customer's opinions both in customer satisfaction or loyalty. In one service, his scores were further away from the customer's evaluations than the supplier's average.

Service managers were identified as having closer interaction with a few customer persons. The service managers' opinions can be considered closer to these customer persons than to the opinions of the rest of the customer persons. While the service manager's opinions were closer to a small number of those of the customer, he may have drifted away from the customer's opinions in general.

The service manager has a more optimistic outlook than the customer in cases Infant and Child, which were those cases located at earlier stages of the network life cycle. As regards cases Youth and Maturity, in which the customers were in later stages of the network life cycle, there was no such increase in the pessimism reported like in the previous chapter. There was however slight pessimism in cases Youth and Maturity. In practice, if the service managers are listened to, they can be utilised by the supplier organisation as the voice of the customer.

10.9 Customer Compass

In four cases, the customer and supplier were asked about their supplier-customer relationships. In Case Birth, no questions were asked regarding the mapping of customer relationship, as the customer was not available for interviews.

Customer portfolio management remained much the same from case to case. Customers mainly saw the customer portfolio management as a group or as a combination of individual and group. Customers considered the portfolios as less individual than did the supplier, who saw the portfolio very much as individual, except in Case Youth, where it was judged to be a combination of individual and group. It seems that the interviewed supplier persons worked in the direct customer interface and they did not take into account other factors than those they managed for the customer. This finding is based on the qualitative feedback from the interviews. The service managers similarly saw the portfolio as individual or close to the individual.

Value proposition design was slightly different in Case Infant, based on the scope of the work that the supplier was providing. This was also clearly seen in the answers relating to value proposition design. In cases Maturity, Child, and Youth, the answers of the service manager, supplier's average,

and customer's average were somewhere in between core product and extended offer. The customers' and supplier's answers were closer to the extended offer than the core product. In Case Infant, the responses of the service manager, supplier's average and customer's average exceeded the extended offer.

In Case Infant, the service manager considered the value proposition design of the supplier as the broadest extensive of all. The rest of the supplier personnel and the customer considered the value proposition design as slightly more than simply an extended offer. In cases Child and Youth, the service manager believed that the scope of the supplier's offering was the narrowest when compared to the customer and the rest of the supplier. In both of these cases, the customer's and supplier's views were very close to each other. In Case Maturity, the service manager had again a view that the value proposition by the supplier was narrower than either the customer or the rest of the supplier saw the situation. In this case, the supplier judged their value proposition slightly broader than the customer did. Throughout the value proposition, the customer's and the supplier's responses remained close to each other. One can say that the service and product provisioning is interpreted similarly by the supplier and the customer.

The **Value-added role** provides an interesting insight into the evolution of the supplier. In the first three cases, Infant, Child, and Youth, the service managers judged the approach of the supplier to be a process manager. In Case Maturity, the service manager viewed the supplier's approach as a product manager approach. In all four cases, the supplier considered the approach of the supplier to be a combination of a product and process managers. At the same time, the customer judged the supplier's approach to start from close to a product manager and progress towards a combination of a product and process manager, but still to remain more on the product manager side.

The supplier's approach remained effectively the same throughout the cases. This was likely as there were in all of the cases people that had worked in various countries and were likely to know the different approaches used. The characterised approach, as a combination of a product and process managers, is quite likely to be true. From the customer's point of view, the trend from close to a product manager approach to a combination of a product and process manager approach can perhaps be explained by the maturity of the networks. As the supplier gains more and more experience of the customer and their networks, the supplier is more capable of applying their relatively standard approach to the customer's local requirements.

Reward and risk sharing was evaluated similarly and only in Case Infant were the opinions slightly more scattered. In Case Infant, the service manager saw that reward and risk sharing was performance based. The others in the supplier organisation, as did the customer, saw that certain elements of the performance based approach were applied to reward and risk sharing.

In cases Child and Youth, all parties clearly indicated that risk and reward sharing was based purely on the market based approach, and that there was no intention on either side to change the approach. In Case Maturity, certain "carrot and stick" elements were implemented in one service and different people judged the whole slightly differently depending on the persons, regarding how significant a role this service was seen to play for the whole. The customer saw in Case Maturity that risk and reward sharing was closest to the market based approach, as the supplier perceived some elements of a performance based approach. In cases Infant and Maturity, there were some elements of risk and reward sharing. The service managers evaluated risk and reward sharing higher than other interviewees.

As a summary of the customer compass, one could conclude that the shape of the figures in all four cases was uniform. Only one significant difference can be spotted in Case Infant in its value proposition design. One can see the clearly larger scope of Case Infant compared to the other cases. Indeed, in Case Infant the number of delivered services was the greatest. The interviewees recognised this, and they graded value proposition design accordingly. The similarity of the customer compasses in different cases can be interpreted as a sign of the similarities in the supplier's mode of delivering services. The supplier remains the same throughout cases, and has the same well-specified services and processes. This could affect the similarities in compasses, despite the fact that the services were individually delivered.

10.10 Summary

This cross-case section has relied on life cycle theory. Life cycle theory has been utilised to explain observed differences between cases. It was observed with regard to customer-supplier relationships that the service manager has been an important person both for the customer and the supplier in different phases of network development regarding the issues related to the care phase. It appears that, as the relationship with the customer matures, the contacts with the customer similarly seem to become more structured, and the supplier's account team play a more significant role towards the customer.

In all of the cases, the importance of the care phase for customer satisfaction was recognised. Nevertheless, there appears a tendency in the more mature networks for the importance of the care phase to be highlighted even more. In contrast, in the younger networks, ongoing project issues were more current.

Regarding the different services, there were some differences between the customers and the supplier. In all the cases, service A was recognised by all customers as the most important service. In younger networks, in addition to service A, a group of other services were identified, but a clear consensus on the other services was lacking. According to the supplier, the perceived importance of service A increased as the networks matured.

In networks that were about to enter care phase or had entered it, services B and C were highlighted. Service B increases in importance over time. As the most acute issues of the network leave more room for the customer to concentrate on other issues, the customer's attention seems to be directed towards resolving maintenance and preventive maintenance issues. In the most mature network, the customer's attention is already shifting towards other issues, as the customer sees that the growth of the network is about to stop ascending. Therefore, the customer begins to seek other options for generating more profit out of the network and getting more out of the existing network, as well as preparing itself for the following generations of solutions. The importance of service C to the customer seems to decrease over time, as the customer learns and gains more confidence with the network. The customer rated service C as the second most important service in cases Infant, Child, and Youth, but in Case Maturity, it was ranked third. Service C is very important at the starting network operations and it was characterised by interviewees as a kind of insurance service, but its importance slightly decreases over time.

The supplier's evaluations of the importance of the service coincide with those of the customer, but mismatches can be seen as well. In the younger networks, the supplier thought that some services other than service A would be the most important services for the customer. As some of the supplier's personnel were very experienced, the mismatch cannot be explained by inexperience. In the more mature networks, the supplier had a better match with the evaluations of the customer as regards the importance of the services.

In observation of the individual services, services A, B, and C can be classified definitely as belonging to the same category of services. These services can be classified as typical maintenance services, in which the customer has little choice; the customer is forced to purchase such services regardless of how satisfied the customer is with them. In interviews, services A, B, and C received high loyalty scores. When the two most important services were selected, services with high loyalty scores were ranked amongst the most important services.

The customer's dissatisfaction with services or their perceptions regarding captivity may be reflected in the other services offered by the supplier. When the customer is in a position to charge a "punishment cost" on an individual service, i.e., not purchasing the services because of another services purchased from the supplier, the customer might also execute that possibility. In Case Child, the customer commented that they felt they were forced to purchase certain services, and expressed their dissatisfaction with the situation. This crossover effect could be reflected in the customer's purchase decisions, as the customer may wish to attempt to break out of the forced loyalty.

In service D, the changes in customer satisfaction were reflected in customer's loyalty. Based on the customer's evaluation, service D can be considered of some importance to the customer

independently of the phase the customer is in within the network lifecycle. Only in Case Youth does the supplier regard service D as more important than the customer. Nevertheless, the viewpoints of supplier and customer are close to each other.

Service E appears to be a competitive service, where even high levels of customer satisfaction do not automatically guarantee the customer's loyalty. Moreover, the customer's set-up has an impact on the need for the service. In the case of service F, it appeared that the customer's need to purchase the service varies as a function of time, as the customer's needs change. The more mature the network becomes, the less likely the customer is to purchase the service with the same levels of satisfaction.

Interestingly, in a few services, in different cases, there surfaced an issue over which opinions regarding customer satisfaction within the customer organisations were split. Those who were dissatisfied would not like to purchase the service, and those who were satisfied would consider buying the service. This was most noticeable in the case of service E in Case Child. This finding highlights that, in a business context, the organisation's perception consists of the perceptions of several individuals, which need to be taken into account when fulfilling customer needs in a business context. Comments of the most critical persons in Case Child and his very low customer loyalty scores are clear evidences of the customer's attempts to maintain a "balance of terror" in a situation where there is lack of trust between the supplier and the customer.

In the cross-case section, the notion of the central persons' more accurate views on services was not supported by the data that were available. In the study on relationships, it was discovered that the supplier's view on services in comparison to the views of the customer changed from optimism in the younger networks to pessimism in the older networks.

The role of the service manager in all cases was appreciated both by the supplier personnel and also by the customer. In a closer study, the service managers in different cases were found to have a reasonably similar evaluation of customer satisfaction to that reported by the customers. The service managers of the study appeared to have "their fingers on the pulse" of the customer. The feedback regarding the actions of the service manager was positively tuned. However, in terms of customer loyalty, the evaluations of the service managers did not appear to match very well those of the customers. While the service manager concept can be seen to increase customer satisfaction, it is in itself not enough to secure supplier's success.

Generally, various persons in the supplier organisation could very well name the individual issues that caused customer dissatisfaction or caused the customer problems. In practice, the challenge appeared to be how well the supplier personnel could quantify and relate those individual issues to the customer's satisfaction with the services.

11 IMPROVED CUSTOMER CARE MODEL

Chapter 11 deal with issues that relate to the practical findings of the study. The practical contribution concentrates on customer-supplier communication, individual services, and the service manager's influence with regard to customer loyalty. In addition, the chapter discusses the link between services and product development, and Internet as a channel for customers to express their satisfaction.

11.1 Practical Contribution of the Study

This section discusses those factors of the study that were seen to have an effect on the results of running the care phase. The elements for the success of care phase are presented in detail in Appendix 6 in the order of the cases in the life cycle curve. In Appendix 6, cases are grouped in the order they are presented in the life cycle curve. Case Birth was in its initial stages, in certain areas no evaluation could be carried out, because the customer could not be interviewed. The perceived success of the cases refers to the economical success of the entire account. Cases Child, Youth, and Maturity were considered to have good results, whereas Case Infant had problems. While the financial results of the care phase were positive, Case Child was slightly less profitable than the others.

The data for the customers' satisfaction with the care phase were gathered from the supplier's own customer satisfaction surveys. In Appendix 6, the grading of the customer's satisfaction with care phase is relative to the supplier's average grade for the care phase. This data from customer satisfaction surveys was used as background material. The listing of the elements of the care phase highlights issues that can be considered important in the care phase. Figure 68 provides a rougher presentation on the factors that are elementary for the success of the care phase.

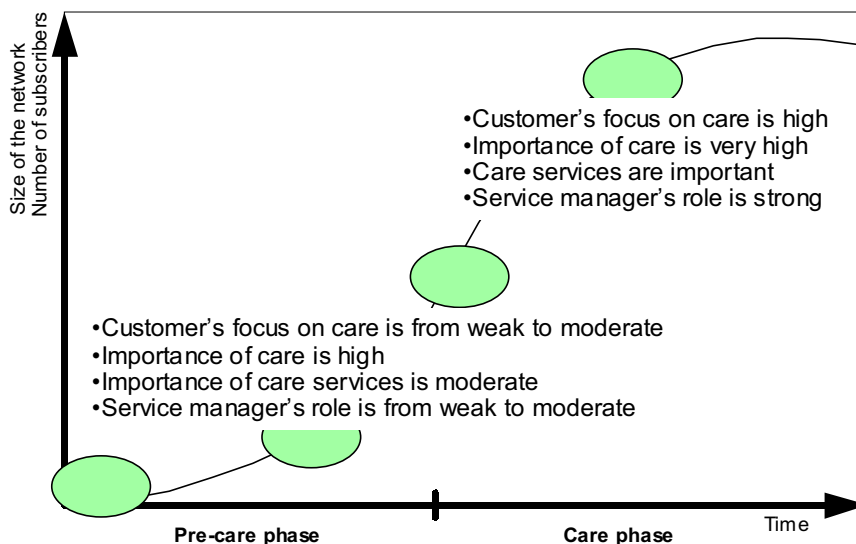


Figure 68. Elements for the success of care phase

Focus on the care phase is seen to develop as the customers mature. In early stages, minimal attention is paid to the care phase. As soon as the customer starts operating their network, the care phase receives attention, initially less than project issues, but soon the operative issues overtake

project issues in the customer's perception. In all the cases, the care phase was recognised as an important issue for total customer satisfaction.

The role and importance of the service manager in the customer interface seem to follow very much the customer's focus on the care phase. In the beginning of the customer relationship, the service manager's involvement was minimal. In cases Infant and Child, the service manager was an active player but his importance for the whole was not crucial because other issues were seen as more important. In the later stages, the service manager had become an established communication channel for the customer to discuss care related issues with the supplier.

Individual services were rated based on the questions posed in the interviews regarding the importance of the services and analysis of the characteristics of the individual services. Service A was considered by all customers as the most important service. Service A may be considered as important for the customer independently of their phase. Customers that had operated their networks for some years considered service B an important service. Service C was important for all customers. Services A, B, and C are all captive in nature. The customer does not currently have a great deal of choice regarding the services, but considers them important. The services are captive and the customer's satisfaction in the care phase is largely defined by these services.

The importance of service D remained somewhat constant in all the cases. Service D was considered an important service for the customer, while not to the same degree as services A, B, and C generally. Service D appears to fall between a captive and a competitive service. The remaining services call for a sensitivity to the situation. Customer needs change constantly as the customer's situations change. Therefore, the customer requires different kinds of services at different times. A supplier then can react to those changes, or even better work proactively with the customer, to build a successful care relationship with its customer.

In service E, the importance of the service was judged to reflect more the structure of the customer and its organisation than the importance of the service for the customer. More importance was attached to whether the customer had established an organisation to perform the tasks of the service. In addition, the service was considered a competitive service, and it was likely that the supplier's service provision in service E was not competitive enough. Service F was considered an important service only in the beginning of the life cycle. Initially, the service appeared to have similar characteristics to service D. Subsequently, it appeared more as a competitive service.

The importance of the service manager increased over time, as the customer became more mature. This phenomenon was also revealed in the interviews. The number of the service manager's contacts was analysed in all cases where the service managers were internally active. In Case Birth, there appeared to be slightly fewer interfaces than in the other cases. The service manager was relatively inactive towards the customer in Case Birth, as his presence was not required to a great degree. In the other cases, the number of contacts was more dependent on the personal styles of the individuals; some had more contacts than the others did.

It is possible that the service manager concept could be too expensive to be economically viable for the smaller customers. The supplier stated that its intention is to manage the care phase as a profitable business, for which Internet solutions may provide an answer. Use of Intranet and Extranet solutions could improve the cost effectiveness of the supplier. Intranet solutions could enable the same person to manage several smaller customers via improved information sharing. Moreover, the customer's self-service provisioning is another alternative. In order to outsource some of the work to the customer, the customer must benefit from his work. This may require some rethinking in the way the environment has been set-up. Because mobile telecommunications is a relatively new industry, some new or alternative ways of handling things may indeed prove to be valid.

Based on Figure 68 and Appendix 6, the success of the care phase cannot be decisively defined using the given variables. The number of internal or external contacts does not appear to explain the success of the account. The customer's focus on the care phase seems to be to some extent also reflected in the results. The importance of the service manager seems to be related to the degree of the customer's focus on the care phase.

All the customers regarded the care phase as important; therefore, the care phase cannot be utilised. The service manager's role and his activity in decision making appear to have an effect on the success of the care phase. Regardless of how the customer has organised their operations and in which part of the life cycle curve the customer is located, they all share the view that the care phase plays or will play an important role in their present and future. Based on the cross-case analysis, care phase has a bigger impact on total customer satisfaction and loyalty than is its share of the supplier's sales. This provides an opportunity for the supplier. As care phase is over represented in customer satisfaction and loyalty in comparison to its share of the sales, it may be possible for the supplier to increase its sales and at the same time improve its profitability by improving the customer's satisfaction with the care phase.

As service quality is associated with satisfiers of the customers (Naumann, 1994, Peck, 1997), delivering superior service to the customer would enable the supplier to achieve high levels of customer satisfaction with economically feasible investments. Innis and La Londe (1994) found that several customer satisfaction variables significantly affect the customer's global customer satisfaction. This could be utilised by reducing the profitability of the care phase thereby benefiting other areas of the business. From the supplier's point of view, the essential question is whether the supplier can gain enough benefits by improving customer value as a result of its investments.

11.2 Communication between Customer and Supplier

The internal and external communication of the supplier could be improved. Occasionally, the marketing and service managers communicated with each other chiefly in crisis situations. Such crises may be avoided by a more proactive approach. In Case Maturity, in which a number of operative persons were involved, there was a question as to how well the supplier's internal organisation communicates with personnel at different levels. Persons in direct customer interface had a good understanding of the customer's needs. The operational people do not necessarily possess the same information or knowledge on such issues as determining which are the services that the supplier delivers to the customer, what are the supplier's performance targets, and, if services have to be prioritised, what are the priorities.

In order to meet customer needs effectively the supplier is likely to need to take a broader approach to the customer. Currently the contacts are mainly to the customer's engineering personnel. As the customer has several stakeholders, the supplier may not be capable of fulfilling customer's real needs or could be misguided if the communication is one-sided. If the supplier relies too much on one source to indicate customer satisfaction and loyalty intentions, the impression of the customer could become misguided. Some customer persons may have different views to the other customer persons and those persons could give weak signals to the supplier of developments.

Communication breakdowns can be caused for example as a decision-maker leaves the organisation. If the customer is still dealing with its former supplier, it is easy to go back to the old supplier (Griffin, 1995). From the supplier's point of view, relying on one source in the customer organisation is therefore risky. If that one person leaves, there will be only a few persons in the customer organisation who would be familiar with the supplier.

Particularly in the earlier stages of the life cycle curve, the customers pointed out that they could also communicate with the higher levels of the supplier's management. In problem situations, the customer saw the option of quickly escalating issues to the higher authorities. This indicates a lack of trust between the supplier and the customer.

Over time there appears to have been an evolution of how issues related to the project and care were handled. In the earlier stages, the issue were handled in a single meeting, whereas in the later stages, both issues were tackled in dedicated meetings. Issues are restricted to one meeting as long as it is felt to be appropriate. From the supplier's point of view, the way communication with the customer is organised can be used as a clue to identify in which phase the customer is in the life cycle curve, which in turn can be used to help define what the customer needs.

At the early stage of a network life cycle, there is nobody that would be interested in the network and its quality. (Supplier, Case Birth)

Customers saw different kinds of pricing structures as interesting options, if they could encourage the supplier to perform in a way that would increase value added. The customer is constantly aware of its traditionally limited options to influence the supplier in the care phase, and ways of securing supplier's performance are considered lucrative. The customer's potential price sensitivity was mainly explained by its constricted market position.

The fact that the central persons did not appear to have a closer view and that the supplier's central persons did not have sufficiently their "finger on the pulse" is interesting. One explanation for the central persons limited perception with regard to certain services in comparison to the supplier could be that supplier's central persons may not be able to receive some of the weak signals from the customer. All the interviewees were involved with customer personnel to a certain extent, and each of them can receive information that the others will not hear or see. The central persons could miss some of those customer's hints. The central persons concentrate on the big picture and they may at the same time miss some of the smaller issues that have an impact on customer satisfaction and loyalty.

11.3 Individual Services

Many interviewees did not know the contents of the services. This hinders decision making and blurs an individual's opinions on services. Even supplier personnel said that, in certain services, they did not have knowledge of the level of the service performance. If the content is not known, service decisions must be made based on limited knowledge and possible misunderstandings. If one does not know what has been bought, judging services fairly may be difficult. The supplier's services would need clarification, redefinition, and reformulation, in addition to improved communication both externally to the customers and internally.

Frequently, the supplier was unable to take into account the macro situation regarding individual services. A customer was often unwilling to quantify their ties to the service. Qualitatively, customer persons expressed their feelings on loyalty whether they were forced to purchase certain services or not. Service problems tend to escalate quickly and ultimately, service recovery is relegated to the front-line employees. Companies can limit the search for problem monitoring to certain areas of the organisation. Typically, complex scheduling that involves co-ordination, whether it is related to the movement of people or equipment, tends to be a problem area (Hart *et al.*, 1990). This appeared to be the case in the present study. Customers frequently complained about issues related to services A and B, both of which involve logistic issues.

Based on the customers' behaviour with different services, there is evidence that indicates customers behave differently in the case of different services. By defining more precisely satisfaction-loyalty curves for different services, the supplier could identify those customers who are more likely to defect in the future. The supplier could also identify certain business opportunities with existing customers. Greater changes in the customer satisfaction and loyalty curves, among other indicators, indicate to the supplier changes in the market place regarding even individual services.

In practice, service managers had a reasonable good understanding of how satisfied the customer was with current services, but they had a limited view on the customer's repurchase intention, when compared with the customer's perceptions. If the supplier possessed knowledge of how the customer is anticipated to behave regarding repurchasing, that knowledge could easily be transformed from customer satisfaction figures into customer loyalty figures. As the supplier can quite well identify the issues bothering the customer, the supplier should be able to prioritise customer's complaints and carry out concrete actions when it is economically feasible. The service manager requires the necessary authority and tools to carry out such actions.

Conventional maintenance and preventive maintenance services appear to figure among the captive services. Customer loyalty in the case of those services is frequently forced due to lack of substitutes and expertise. Loyalty to the services can change quickly, particularly with discontinuities in technologies. If the satisfaction-loyalty curves change, they will become more competitive services and only high levels of customer satisfaction will equip the supplier with the opportunity to provide

those services in the future. Those curves would also give an indication of negotiation power in relation to individual services.

Because customer needs can change, and the customer satisfaction-loyalty curves can similarly change inside an industry over time, only the most satisfied customers will remain loyal. Therefore, suppliers cannot assume that customers who have been loyal will remain loyal without the supplier's conscious efforts. It should be remembered that customer satisfaction can have an impact on another customer's buying behaviour via the customer referrals. Furthermore, in the business-to-business environment, a satisfied customer can encourage other customers to purchase from the supplier.

Service F was a service in which the satisfaction-loyalty relationship appeared to change dynamically over time. In the early stage, the customer's likelihood of purchasing the service was very high, as a new organisation required extra help. However, the situation subsequently changed. The customer still indicated that they would be satisfied with the service, but that they would purchase the service only if they had to supplement their own resources. Usage of the service was exclusively a cost issue; the customer did not perceive a special value added associated with the service. Customer needs can dynamically change, and therefore customer needs have to be analysed on a customer basis.

In the case of more competitive services, the customer additionally had other alternatives. The profitability of these services is lower than is the case with the forced loyalty services and the perceived value added is observed more critically by the customers. For the supplier, the different nature of different services clearly poses a challenge. Service E was an example of a service that was competitive in nature. As the customer has a choice in the service, the customer is very demanding of the service. From the customer's point of view, the supplier must add sufficient value so that it would be worth purchasing the service. The supplier has basically three options: to lower its price or to increase its value, or both.

As most care services force loyalty, it may create an extra challenge for competitive services. It is likely that captive services have a crossover effect on competitive services. The customer may be tempted to impose penalty costs on the supplier. The customer wishes to reduce its dependency on a supplier from which they feel they are forced to buy. The customer is therefore likely to purchase from the same source only if the supplier can provide an edge over the competition. In practice, this may lead to a situation where the supplier's competitive service may have to be highly competitive. Mittal *et al.* (1999) report a crossover effect between product and service in consumer markets when the consumer determines behavioural intentions towards a supplier.

11.4 The Service Manager, Customer Satisfaction, and Loyalty

The service manager was considered a factor that improved the credibility of the supplier's care phase operations. The shift from product to services (McKenna, 1997) brings specialised knowledge and human understanding to the forefront. In that sense, the service manager is important for trust building between the supplier and customer. This indicates that the service manager concept has been relatively effective both from the customer's and supplier's point of view. A long-term service manager would be an ideal solution from the supplier's and customer's point of view, as trust building takes time.

Service manager turnover is an issue that the supplier must consider, as it could turn out to be a major challenge. Two out of five service managers have changed their job since the interviews, and the job description of one of them has been modified. One of the most common reasons for losing good employees is that the company sets high standards without providing the necessary tools and capabilities for achieving those expectations (Griffin, 1995). Service managers should be able to receive feedback from the customer without becoming frustrated themselves. A situation whereby the customer is dissatisfied because of the departure of the service manager in practice makes matters appear even worse from the customer's perspective. This raises the question of whether the attention and appraisal given to the service managers is adequate.

As has been found in the present study, the supplier's evaluation of the customer's satisfaction and loyalty changed from optimism to pessimism as a function of time. The supplier should try to identify the potential risks related to optimism and pessimism in the care phase regarding services. In the case of optimism, the supplier can end up in a situation whereby it can overprice its services and, at the same time, the supplier may deliver inferior service levels to the customer. In the case of excessive pessimism, there is a risk of the opposite.

From the commercial point of view, the supplier, and particularly the service manager, had a realistic evaluation of customer satisfaction. By giving attention to customer satisfaction, the supplier should be able to recognise the customer's repurchase intentions adequately reliably. The supplier can also pay attention to the attitudes and take necessary action. Jeffery (1996) states that customer loyalty programmes are useful in markets with relatively little product or service differentiation, as it can be used as an alternative to price-cutting. This is not yet the case in the mobile telecommunications market, and therefore efforts directed at service differentiation, as in the case of the service manager, can result in improved performance.

11.5 Product and Service Improvements

Generally, customers want a flexible and individual approach towards them. In service delivery, this implies local tailoring. An ideal solution from the supplier's perspective would be a product that would support the customer better as a standard product, but which still would have characteristics of individuality. It did not emerge from the interviews that service managers would be utilised for the research and development purposes in the creation of new or enhanced products. In order to create a successful design, front line employees must be involved with product development. However, as in the case of the service manager, this frequently remains an unutilised part of the design function.

Currently, one can see that co-operation with the research and development does not yet work as it should. (Supplier)

11.6 Internet as a Channel to Express Dissatisfaction

The emerge of the Internet has made it possible for new companies to establish businesses on the Web. One category is companies that gather feedback from dissatisfied customers about suppliers and their products. This can become costly for those companies that do not take their customer feedback seriously. Customers can see these new companies as reliable and objective third parties, which will channel and utilise their information better than the supplier itself. The risk for the supplier is that information of its shortcomings in its products can be made available for anybody. There are no guarantees that the feedback will be made available for the provider. With payment, the provider can receive the same information as anybody else but there may be a delay in their receiving the information.

On the whole, it is easier for companies to succeed if they can avoid this competition over information on their own products. Product providers should persuade customers that the feedback given to the provider is not wasted. Customer loyalty can help in this. A customer who wants to purchase from the supplier is likely to complain directly to the supplier. In the business-to-business environment, this kind of phenomenon is less likely to exist, but it could be a way to put pressure on the supplier. Since these new forms of Internet technology are just emerging, their impact is difficult to estimate, but they certainly provide an interesting area for further research. According to McKenna (1997), customers should have easy and quick access to satisfaction, and the Internet could represent a tool for this purpose.

12 DISCUSSION

This chapter discusses the theoretical and practical contributions of the study. The chapter summarises the findings of the study and positions them in relation to the earlier body of knowledge of customer relations, the importance of care, and customer satisfaction and customer loyalty, particularly in the context of care phase. The presented hypotheses are reviewed, and their support is evaluated in the light of the results. A relatively new business relationship management concept used in the supplier company was described and evaluated. The research is evaluated in its construct, internal and external validity, and reliability. Furthermore, the limitations of the study and proposals for future research are presented.

12.1 Theoretical Contribution of the Study

The early part of the study aimed to resolve the issue surrounding the service manager concept in managing care phase. First, in the preliminary study attention was paid to quantitative issues, but later there was identified a need to focus more on the consequences and indirect results of the service manager concept, rather than the financial impact. At an early stage, it became clear that the importance of care for customer satisfaction could be crucial; furthermore, customer satisfaction was measurable. Therefore, the importance of the care phase and customer satisfaction and loyalty were highlighted in the present study. An alternative approach could have been to study issues related to service quality, customer satisfaction, business relationships, interactions, commitment and trust.

The cases were selected to represent the supplier's typical customer cases in the different phases of the life cycle curve. Case Birth represented a case in which negotiations about a contract were ongoing. Case Infant represented a case in which network building had started. Case Child represented a case in which the network was still being built, and the operations of the network were focal for the customer. Case Youth and Case Maturity represented cases in which the customers were mature or very mature network operators.

As regards hypothesis 1, the quantitative data could not provide a clear picture whether the importance of care would increase over time as all the interviewees considered care as an important issue. All the interviewees were dealing, at least to some extent, with care phase related services; it would be quite natural for the importance of the care phase to be highlighted, at least to a certain extent, by that kind of sample. Based on the quantitative data, the importance of the care phase was seen as slightly more important by the customers who were at later stages of the life cycle curve, yet the difference with cases in the early stages of the life cycle curve was not large. The relative importance of the care phase was very high even in the network building phase of Case Infant. Based on the qualitative data, differences can be seen. In Case Birth and Case Infant comments were made on the importance of the project, i.e., building the network was considered even more important than the care phase. Such comments were not made in the interviews of the customers in the later stages of the life cycle curve. Thus Hypothesis 1 can be seen to have received some support, but how much the importance increased over time leaves room for discussion.

Hypothesis 2 was supported, as the more mature the relationship between the supplier and the customer became, the more the relationships were handled by local account teams. In the analysis, three major differences were identified in cases Birth and Infant, which were at their early stages in the life cycle curve, compared to cases Youth and Maturity, which were the most mature cases in the life cycle curve. In the later stages of the life cycle curve, the account manager and his personnel handled most of the situations, and the service manager and project manager had clearly specialised in their own specific areas. The customer had split its organisation in the later phases of the life cycle curve into operative and network building organisations and these issues were handled in different forums. The structure of the communication may be connected with trust building between the supplier and the customer, and with the customer's trust of the network delivered by the supplier. However, in the present study, trust has not been studied. Cases located at the earlier

phases of the life cycle curve can be characterised by the customer's bypassing to the supplier's senior management in order to resolve potentially problematic issues, as in the later stages of the life cycle curve these issues could be handled locally.

In the case of a new customer, the communication of the supplier with the customer was neither planned nor organised in a precise manner. The account manager had a leading role, but otherwise the number of contacts and the managerial level of people that were in contact could vary considerably. In younger networks, the supplier's account team was just beginning to communicate towards the customer, and the customer could still occasionally contact higher levels of management to settle problem situations. In the more mature cases in the life cycle curve, the role of account managers did not appear to change, but the contacts seemed to be directed through the account team, where decisions appeared to be made. In the supplier organisation, responsibilities and contacts had been separated according to the customer's organisation and the tasks that were tackled with the customer. In the more mature networks, cases Youth and Maturity, the project manager and service manager had specialised both in those customer contacts that were relevant to their tasks. In the customer interface, the majority of issues were channelled through the account team and persons who specialise in the issues that were tackled. In the study, it did not become apparent whether the organisation of the communication happened in this manner because of mutual understanding between the supplier and the customer or if it developed as the customers had been forced to adapt to the situation.

The findings indicate that the service manager concept is important for the customer. The quantitative data on the service manager did not unanimously support the idea that the service manager was a very important service for the customers studied. Quantitative data were available from cases Infant and Maturity. Some discussions were also conducted on the service manager in cases Child and Youth. Van den Bosch *et al.* (1999) point out that a company's current knowledge cannot be separated from how it is currently organised. In the early stages of network building, the supplier did not necessarily appreciate the role of the service manager as one of the crucial persons for the supplier, but was strongly focused on the project. The customer could see some benefits. As the network has been in operation for some time, the role of the service manager is more appreciated, which supports Hypothesis 3. However, in certain industries other than in telecommunications, one can not currently be sure of the benefits of the service manager.

The service manager had a significant role regarding the care phase services in all of the cases except Case Birth, where the contract negotiations for a new customer were ongoing. In none of the cases were service managers ignored regarding the decisions related to the care phase, and in each case, the service manager was considered one of the central persons on the supplier's side. Based on the number and frequency of contacts, the service manager was an active part of the supplier's interaction with the customer and therefore Hypothesis 4 is supported.

In the interviews, all the interviewees unanimously concluded that the service manager was seen from the customer's perspective as a factor that increased and contributed to customer satisfaction with the supplier. In the present study, it could not be clarified the degree to which a dedicated service manager is a cost-effective way to resolve the issues of customer satisfaction and loyalty.

In the early part of the study, the hypothesis was put forward that, because of their good customer contacts, central persons would be able to form a better picture of the customer than the customer or the average supplier person. The central persons could influence the supplier towards their view that would be a better match with the customer needs than the view of the non-central persons. A better view can be interpreted as how close to the customer's and customer's central persons view that the supplier as average and the supplier central persons could get. A comparison was made regarding the delivered services in relation to customer satisfaction and loyalty. However, Hypothesis 5 did not gain sufficient support from the gathered data. Indeed, in the present research, the findings quite clearly show that the central persons, particularly those of the supplier, did not possess the knowledge or information that would have distinguished them from the other interviewees. One of the reasons could be that the interviewees all had quite a good understanding of the customer and their issues, and therefore no significant differences could be observed.

In Case Maturity, two operative level supplier persons were interviewed and they did not have a "bigger picture" of the customer situation. Other persons could not be identified who would not have been aware about the issues regarding a particular customer and therefore, the differences between

central persons and the supplier and the customers as average remained quite small. When the means and standard deviations of the individual services were examined in terms of customer satisfaction and loyalty, the central persons could not be considered closer to each other in their opinions than the entire samples of the customers and supplier were.

It appeared that the views of the customer and supplier had no clear directions, and the views of the central persons of the customer and the supplier did not coincide when the customers progressed along the life cycle curve, when compared with the entire samples. Rather, it appeared that the supplier's attitude towards the customer was optimistic in the early stages of the life cycle curve, but subsequently transformed via a neutral position to a pessimistic view of the capabilities of the supplier towards the customer.

Within both the supplier and customer organisations, the internal communication seemed somewhat intense. The information could already have been distributed to all relevant parties, and the potentially valuable information that the central persons may have had would have already been distributed within the supplier and customer organisations.

Hypothesis 6 was partially supported. The service managers seemed to have quite a good understanding of customer satisfaction, compared with that reported by the customer. Furthermore, in interviews qualitative results showed that the customer issues were well identified by service managers, as the customer and other supplier persons addressed those same issues. Regarding individual services, it nevertheless appeared that on many occasions the service managers did not have a very clear picture of the customer's intentions of repurchasing particular services from the supplier. The service managers frequently appeared unable to define the customer's repurchase intentions. In addition, one should bear in mind that service managers are perhaps somewhat biased towards specific customer persons. The service managers' view could be partial, as their opinions did not necessarily reflect the views of the entire customer organisation.

Throughout the cases, the most important service did not change, as all of the customer interviewees selected the same service (for service descriptions see Chapter "4.7.3 Delivered Services"). Differences can be found, however, with regard to other services. In the earlier stages, as in Case Infant, neither the customer nor the supplier had a very clear picture of the essential services. As the companies progressed in the product life cycle curve, one could see that service C was gaining ground. As the importance of service C diminished, the importance of service B grew. In the later stages of the life cycle, the customer showed some indication of interest in new technologies that were not noticed in the case of the customers that were located towards the earlier stages of the life cycle curve. Therefore, Hypothesis 7 has received support from the data.

Furthermore, Hypothesis 7 found support because the two most important services varied from customer to customer. Some services remain important for the customer, as was noted in the case of service A. In other services, there was variation among the customers. Different customers found service C a good service to have, but the nature of the service appeared to change over time. In the early stages of the life cycle curve, customers considered that failures in the network were quite likely, and therefore the service was required. In the later stages of the life cycle curve, the service was considered good-to-have, as the customer began to rely more on the network and its stability. The change in customer needs can also be observed in service B, where its importance for the customer was initially not particularly high, after which its importance grew and then diminished towards the end.

Hypothesis 8 hypothesises that as customer needs change over time the characteristics of the service change. This is reflected as a change in the customer satisfaction-customer loyalty curve depending on the phase in the life cycle curve as the user of the equipment. Hypothesis 8 was supported by the data. In particular, service F can be classified as a service where the customer's needs changed over time. In the earlier stages of the life cycle curve the customer was more likely to purchase the services because of their need to have supplier's expertise to perform the service for them. Whereas in the later stages of the life cycle curve, the more experienced customer was less likely to purchase the service. In qualitative data the differences in the customer needs were clear. All customers considered that they would be relatively satisfied with the service. In early stage the customer saw there a need to purchase the service from the supplier, whereas later on as the customer has gained experience the service had become clearly a service, which purpose was

merely to supplement customer's temporary lack of resources, otherwise the service was not required.

However, the changes in the customer needs are not necessarily reflected to the customer satisfaction-loyalty curves, as is the case in service C. The importance of service C was seen to diminish over time, but that was not reflected to the satisfaction-loyalty curves, as only the nature for the need of this service changed rather than the whole need; customer still required service C. In service A, it was observed that as the customer's needs remained the same, the characteristics of the satisfaction-loyalty curve similarly remained the same. Therefore, the most reliable indicator of changes in the shape of the customer satisfaction-loyalty curves are changes on the customer's position in the life cycle curve that can be clearly identified to be related to the changes of the customer and its needs. In service F one can see that, as the customer learns how to deal with the issues related to service F, they also become self-sufficient.

Hypothesis 9 indicates that different care services can have different kinds of customer satisfaction and loyalty curves at the same time. In the present study, different kinds of customer satisfaction-loyalty curves were discovered among different services. These findings are similar to those of Jones and Sasser (1995) in Figure 5. Services A, B, and C could be classified as "false loyalty" (Jones and Sasser, 1995) services. They could also be classified as conventional maintenance or preventive maintenance services, as that is their primary purpose. In service D, there was a connection between customer satisfaction and loyalty. Service D appeared to have almost the same values for satisfaction and loyalty. Service E is mainly interpreted to be dependent on the approach the customer has taken for the service.

Hypothesis	Description	Result
1	The importance of the care phase to the customer increases over time.	Partially supported
2	The structure of communication between supplier and customer becomes more established and standardised when co-operation develops.	Supported
3	The importance of the service manager increases over time as the customer relationship matures and the customer starts utilising the equipment purchased.	Partially supported
4	The service manager is one of the supplier's central personnel for the customer in the care phase	Supported
5	The supplier's central persons have a better understanding of the customer's business than the supplier on average. The supplier's central persons understand the customer's expectations and needs better when measured in terms of understanding customer satisfaction and loyalty.	Not supported
6	The service manager has a better view than the rest of the supplier personnel regarding the care phase and customer's satisfaction and loyalty to it.	Partially supported
7	Customer behaviour and attitude towards supplier's services is dependent on the duration of time in terms of the customer relationship or the experiences of the use of the equipment. This duration is reflected in the different services. Customers have different perceived importance for the services depending on their stage on the life cycle curve as mobile operators or in terms of customer relationship.	Supported
8	As customer needs change over time, the characteristics of the service change. This is reflected as a change in the customer satisfaction-customer loyalty curve according to the phase of the life cycle curve which describes the customer as the user of the equipment.	Supported
9	Different care services can have different customer satisfaction and customer loyalty curves, even if the customer would purchase those services from the same supplier at the same time, and they would be provided to the customer at the same time.	Supported

12.2 Discussion of the Results

12.2.1 Importance of Care Phase

In the present study, the used evolutionary life cycle approach provided more inside view into the care phase in the mobile telecommunications industry. Based on the cross-cases analysis, it appears that the importance of the care phase may increase slightly over time, but already in the early stages, the importance of the care phase is realised by both the customer and the supplier. Among others, Oliver (1993), Naumann (1994), and Peck (1997) have demonstrated that service quality contributes considerably to customer satisfaction, i.e., services are satisfiers. In order to reach high levels of customer satisfaction, a company needs to combine the company's performance with adequate "hygiene factors" (Herzberg, 1972) with the high performance of satisfier. Friday and Cotts (1995) state that, depending on the customer's perception, the necessity of a service can vary. As customers' perceptions of the importance of services depends on their stage on the life cycle curve as mobile operators or in terms of customer relationship, an extra challenge for the quality of service is posed. On the other hand, it also provides an opportunity to excel. This warrant the statement that the after sales operations of the companies has long remained an area that has not caught all the attention it appears to deserve based on the results of the present research.

Companies frequently concentrate on new customers, as they assume that current customers are satisfied. However, this is not necessarily the case. Several researchers argue (Reichheld and Sasser, 1990, Glanz, 1994, Vavra, 1994 and 1995, Zeithaml *et al.* 1996 and Reichheld 1996, Anderson and Mittal, 2000) that investing in existing customers is viable because of the lifetime value of the customer and because many customers need after-purchase reassurance. It has been demonstrated that the care phase appears to be an important factor for the satisfaction and loyalty of customers. As services are frequently performed in the presence of the customer, the services are visible to the customers and the customer's satisfaction with a service can be overrepresented in the customer's total satisfaction. The customers' perception of the supplier's performance can be overly influenced by the performance of the services in general, and by the care phase services in particular. This is not necessarily the case in many other industries, but currently in mobile telecommunications, care phase services represent an important factor when the customer is forming his opinion on the supplier's performance and the value added that the supplier has provided.

12.2.2 Customer Satisfaction and Loyalty with Respect to Individual Services

Much of the previous research on customer satisfaction and loyalty has been conducted in settings that either have concentrated on studying larger wholes, such as industries or individual companies, as in Fornell (1992), Jones and Sasser (1995) and Heskett *et al.* (1997), or have studied single-service environments. In the present study, indications have been found that the single-service has an impact on other services. Fornell (1992) and Jones and Sasser (1995) studied certain industries and the manner in which customers behave within those industries. It is a rational approach to limit the study to the industry level if the study takes a macro view. From the supplier's point of view, purchase decisions are made at the service level, which is the unit of study in the present research, which has shown that within an industry there are services that have fundamentally different characteristics. This suggests that, to understand single customer behaviour for business purposes, one needs to divide entities to levels whereby the customer is capable of purchasing them. All customers are different and they need different kinds of services.

Based on the customers' expressed opinions of services, there is evidence that indicates that customers' behaviour varies from service to service, even they are all in the care phase. Customers' buying behaviour in mobile telecommunications appears to depend on the nature of the individual service. The approach taken by Fornell (1992) and Jones and Sasser (1995) to customer behaviour started mainly from the macro level, whereas in the present study, the approach has been from the micro level to the macro level (Holmlund, 1997, Holmlund and Strandvik, 1999, Leminen, 1999). According to Dijksterhuis *et al.* (1999), when an organisation is confronted with a chaotic

environment, the firms are likely to change their behaviour, as the old behaviours become less appropriate. In times of change or turbulence, there are inevitably delays in implementing new ways of operating and therefore, the behaviour varies among customers in different phases of the life cycle curve. The changes in the importance of individual services can be explained by using the life cycle theory, as they are perceived from the perspective of customer needs.

In the present study, it was pointed out that customer needs for certain services change over time, but this phenomenon did not occur for all of the services. In some of the services, indications were found of changes in customer behaviour regarding the services. Woodruff (1997) maintains that a customer's initial purchase decision may differ from subsequent criteria. Consequently, one cannot assume that there exist static "industry-wide" customer satisfaction-loyalty curves, as generally has been suggested in work on the competitiveness of different industries (Jones and Sasser, 1995). Rather, each of the services is likely to have its own characteristics and its own customer satisfaction-loyalty curves. This suggests that services are a loosely tied heterogeneous group of different services rather than a homogenous group. Even the curves for individual services can be dynamic, and their shape depends more on the customer's position in the life cycle curve than has thus far been thought. The data of the present research adds to the debate on whether differences in customer needs are better viewed according to the order of importance of the services and whether satisfaction-loyalty curves would be more related to the actual market situation. This observation also suggests a basis for further research.

Indications were found of a possible crossover effect in the individual services, whereby a customer may try to penalise another supplier's service. The customer uses penalty costs towards the supplier in order to offset high costs in one service with a no-purchase decision in another service that can be purchased from another source. Mittal *et al.* (1999) describe a crossover effect between the products and services. This research extends that to complement individual services. In particular, highly competitive services can suffer as a result of captive services.

Oliva *et al.* (1992) state that, in the case of consumer durables:

...when satisfaction rose above a certain threshold, repurchase loyalty climbed rapidly. In contrast, when satisfaction fell below a different threshold, customer loyalty declined equally rapidly. However, between these thresholds, loyalty was relatively flat.

This was not the case in the present research when different services delivered to the customers were compared. The findings of this research suggest that individual services in the satisfaction-loyalty curves are closer to the findings of Jones and Sasser (1995) and Heskett *et al.* (1997) without particular thresholds. It was observed that, beyond a certain threshold or certain customer satisfaction value, one could observe rapid growth in customer loyalty. It was assumed that each of the customer satisfaction-loyalty curves starts with customer satisfaction and customer loyalty (0,0) and ends with (10,10). In captive and competitive services, a certain customer satisfaction value was noted, after which loyalty was observed to increase rapidly. In the case of services that were neutral, satisfaction and loyalty appeared to be almost linear. However, the services frequently appeared to behave in a non-linear manner, as pointed out by Anderson and Mittal (2000). The data does not warrant conclusions regarding the possible asymmetry of customer satisfaction and loyalty (Anderson and Mittal, 2000).

It is possible that there are such services and products as those described by Oliva *et al.* (1992) whereby when satisfaction rose above a certain threshold, loyalty climbed rapidly, and when satisfaction fell below a different threshold, customer loyalty declined rapidly, and between these thresholds, loyalty was flat. For the services studied in the present research, this does not appear to be an inevitable conclusion. One must bear in mind that the data gathered were somewhat limited and represent one supplier and its four customers. The data were collected from a business-to-business environment while those of Oliva *et al.* are from consumer markets.

Previous research (Parasuraman *et al.*, 1985, Holmlund, 1997, Woodruff, 1997, Leminen, 1999, Järvelin 2001) has shown that there are frequently differences between the views of a supplier's management regarding customer value and customers' views on what they say they value. In the present study, major differences between the customers' and supplier's evaluations of the importance of the services were identified. The differences were particularly clear in the earlier stages of the life cycle curve, i.e., in early cases, there were a few services where the customer and

supplier evaluations very clearly differed from each other. In later stages of the life cycle, the customer and supplier evaluations of services differed. However, a number of services were identified whereby the evaluations of the customer and supplier were close to each other.

The service managers' opinions were observed to be relatively close to those customer persons that they were working closer with. This indicates that the differences in the viewpoints of the customer and supplier relate to the quality and quantity of the communications, and that the better the customer and its needs are known relates to the awareness that exists within the supplier organisation of the customer's perceptions. Because of the size of the data, while the findings may represent evidence that indicates this, the subject should be further studied.

12.2.3 Customer Relations

According to Heskett *et al.* (1997), customers and employees evaluate a company's recent performance similarly according to dimensions that are important for the customers: ease of doing business, competence of service people, timeliness of the service, service representatives' availability, and interest displayed by service personnel in helping customers. Brown (1992) found that frontline employees can predict with 90 per cent accuracy when and about what customers will complain. On the other hand, Parasuraman *et al.* (1985), in their service quality model, and Barsky (1995) identify differences in the views of a supplier and its customer as a source of service delivery problems. In the present study, customers and the supplier frequently agreed about services and their problems. In qualitative interviews, both the customer persons and supplier persons identified the same issues that would be the most acute in the present study. The supplier's and customer's opinions differed in the quantitative evaluation, where the customer and supplier persons could judge the same services very differently.

If there had been a recent problem, it tended to be raised in the customer interviews when services were discussed. This highlights that, when customers evaluated their services they looked back at what had happened, what individual incidents there had been, and subsequently they formed an overall picture of the service. This observation is similar to those of Teas (1993), Parasuraman *et al.* (1994), and Jones and Suh (2000).

One of the hypotheses of this research is that the central persons possess a better knowledge or perception of the customer. The amount and intensity of the communication between the supplier's and customer's central persons was expected to be linked to their knowledge. However, recent studies on organisations have also highlighted the co-evolution between organisations both at the microevolution and macroevolution levels, which would point towards a more complex structures of sharing knowledge (Dijksterhuis *et al.*, 1999, Lewin *et al.*, 1999, Van den Bosch *et al.*, 1999). In the interviews, the entire interviewed supplier organisation seemed quite well aware of what was going in the customer organisation, which services were important, and where problems occurred. It was expected that central persons would more knowledge about the customer, such as preferences for services, customer satisfaction, and customer loyalty, but this was not supported. Nevertheless, even if the decision-makers in the customer organisation were no more knowledgeable about customer's opinions than average, those persons are in a position to make purchase decisions. Therefore, the supplier should try to have an understanding and utilise its knowledge of the customer's opinions.

This finding underlines to an even greater degree that, in a business context, the organisation's quality perception consists of the perceptions of several individuals. Holmlund (1997) and Holmlund and Strandvik (1999) highlight that it is necessary to recognise that an overall representation of perceived quality in an organisation involves the problem of how to aggregate individual perceptions. According to Solomon *et al.* (1985), each participant plays a role in the relationship. This research confirms these observations. Many studies argue that a significant individual could represent the perception of an organisation. This research has not found support for the hypothesis. In addition, it was found that persons in decisive roles have very different viewpoints. Each individual in an organisation can have slightly different needs that have to be met in order to satisfy the individual. Holmlund and Strandvik (1999) propose a configuration map to depict these differing perceptions. The map can be used as a systematic tool for relationship diagnosis.

Rather than opinions of the central persons becoming closer, another kind of phenomenon was observed. In comparison to the opinions of the customer, at the beginning of the life cycle curve, the supplier had an optimistic evaluation of the services, which subsequently changed to pessimism. The service managers' communication with those customer persons with whom they were in more frequent contacts was analysed more thoroughly than that with other customer persons. It was concluded that the opinions of these customer persons and the service managers were relatively close to each other.

Heskett *et al.* (1997) point out that customers who purchase services with high transaction values, high requirements, and high-perceived risk prefer to deal with the same person in the supplier organisation. The customers appreciated the supplier's service manager concept. In many interviews, the value of the service manager was mentioned. The objectives of the service manager concept align with Vavra's (1995) customer communication programmes, which are to inform and educate customers about products and services, assure customer's purchasing, make customers feel appreciated, and help manage the company's perspective on issues. However, the concept of a customer-dedicated service manager is not economically viable for all customers.

Several researchers have underlined that, in service business, an important part of selling is to gain the customer's trust. This view is shared by Näsi *et al.* (1987), Grönroos (1988), Gitomer (1998), Heskett *et al.* (1990), Storbacka *et al.* (1994), Berry (1995), Griffin (1995), Maister (1997), Peck (1997), Homlund and Strandvik (1999), Leminen (1999), (and Parasuraman and Grewal (2000b). Garbarino and Johnson (1999) and Jeffries and Reed (2000) claim that trust is believed to have an important role in relationships, both by academics as well as business people. Trust has various definition depending on the studies. Singh and Sirdeshmukh (2000) argue that organisational trust drawn from diverse disciplines has lead to numerous conceptualisations of the trust construct. The conceptualisation of trust can be so "extended" and multi-dimensional that it limits the usefulness of trust for empirical work.

As trust has been highlighted as an important factor for the building of customer loyalty, it is assumed that, as trust develops between counterparts, their communication can be handled by those that have expertise in a particular area. Consequently, communication is not necessarily required with high level management when problems occur that can be solved with the help of lower levels of the organisation. In the present study, it was observed that the customer and the supplier arranged their communication as they preferred (Krackhardt and Hanson, 1993). In the study, evidence was found for Homlund's (1997) findings regarding interactions that indeed categorising interactions would provide a meaningful analytical tool to study the interconnectedness of interactions and relationships. In the study, it was additionally noted that lack of trust, which was identified by Leminen (1999) as a social gap, was reflected in the customer answers in the customer loyalty scores.

Bolton *et al.* (1993) propose that telecommunications services are technologically driven and that structural change will follow technological change. This structural change is closely linked with the idea of life cycle thinking in the present study, as the core of life cycle thinking assumes that with time things will evolve, as was the case in the structure of customer organisations, and of customer needs that are similarly seen to change with time.

12.3 Limitations of the Research

There are two basic drawbacks to case research (Eisenhardt 1989). First, intensive use of empirical evidence can yield a theory that is overly complex, rich in detail, but lacking the means of assessing the most important relationships and the simplicity of overall perspective. Secondly, building from cases may result in a narrow and idiosyncratic theory if the researcher is unable to raise the level of generality. This results in theories about specific phenomena rather than a general theory. However, while the framework used is complex and rich in detail, this was necessary because of the complexity of the studied subject. The findings of the study indicate that they would be generalisable in the similar set-ups as in the case of the mobile telecommunications.

As a limitation of the research is the data that has been gathered within one supplier company and the number of interviewees was limited, therefore the data is limited as well. In the present study,

qualitative data and quantitative data were used, which makes the findings more reliable. The cases represent the supplier's different customers. The reason for this arrangement has been to enable a research that tackles topics in the areas that are new and possibly completely novel in the industry. The interviewees were selected using snowball sampling and were not artificially limited, but represent those persons that the service managers interface with. According to Eisenhardt (1989) this is one of the areas where case study is particularly appropriate. In order to get insight to the new approach for the research subject the researcher concentrated on one supplier company. As the unit of analysis is at the company level and at the group level the arrangement has its benefits: with the use of one supplier company the variation because of different suppliers was eliminated. The main efforts were directed to study similarities and differences in customers that can be observed in the different phases of the life cycle curve over time as mobile operators or in terms of customer relationship. From the study point of view, the elapsed time for these two factors was identical. However, one can not establish whether the customer relationship or the customer's experience as a mobile operator was the determining factor.

The possible bias in the present study, is the viewpoint of higher management, i.e., those higher management persons that were interviewed. Interviewees were selected employees, both in the customer and the supplier organisations, that were familiar with the issues and services related to care phase. Therefore, the majority of the persons were directly involved with care phase issues. Those customer persons that are not that much involved with care phase issues like marketing or financial accounting were not interviewed. They may have had a different view. However, as the objective of the study was firstly to illustrate and describe the new after market model, this possible bias is not critical.

Regarding the central persons there was found evidence in Case Maturity that supplier's operative persons were missing a "bigger picture". Persons in operative positions were not interviewed in the other cases. This could have lead into a situation where the difference between central and non-central persons could have become smaller than if the operative persons were involved. The interviewed people appeared to have quite a good understanding of the customer and its challenges. In the supplier organisation, the communication seemed quite intense, as well as in the customer organisations. The information could already have been distributed to all relevant parties and the potentially valuable information that the central persons may have had, would already have been distributed within the supplier and customer organisations.

The method used for selecting central persons was actually to identify those persons that were non-central persons and to remove them away. Even with this approach, because of limited data other persons could be identified as central persons in a more extensive study. It is also possible that in a larger study some of the current central persons could be removed from the group of central persons, as there would be more data available. Therefore, the present study raises questions about who should be selected as central persons and whether they possess better knowledge of the business.

Riggs (1983), Lele and Sheth (1987), Griffin (1995), and Gitomer (1998) claim that customers who complain wish to improve things and customer's who are dissatisfied and have decided to leave will no longer complain. Customers that could be classified in this category were not identified in this research. However, in Case Infant the customer had recently partly defected regarding service E. The customer in Case Infant can be classified as an unhappy customer, because in the supplier's satisfaction survey the customer was considered a dissatisfied customer. Nevertheless, the customers in all the cases can be considered relatively satisfied.

Because the data in the present study were gathered from the customers of a single supplier, deep observation was possible, but at the same time the generalisability of the findings may have suffered. The supplier appeared to deliver all of its services more or less in the same manner to the customers in the care phase. As noted already earlier, other studies, such as Oliva *et al.* (1992), have resulted in other forms of customer satisfaction-loyalty curves. As the data in the cases were limited, no analysis was made to estimate the exact shapes of the curves. Rather, the plotting of the data in the form of customer satisfaction-loyalty matrixes were utilised.

In the quantitative information, the customer persons could have underestimated their loyalty and satisfaction, as the figures at times differed from what could have been anticipated based on the qualitative feedback. Nevertheless, previous research (Jones and Sasser, 1995, Heskett *et al.*,

1997) found that the overstatements remain somewhat constant over time and it can therefore be assumed that, with each interviewee, the over- or understatements would have been generally constant with different services and methods. This would indicate that the shapes of the customer satisfaction-loyalty curves could be different in a more thorough study. The current data on the curves gives an indication of shapes of the curves.

As the services plotted in the customer satisfaction-loyalty matrixes represent one supplier's services in the care phase, and the data for the services were somewhat limited, one could not draw conclusions about the exact shape of those satisfaction-loyalty curves. Rather, one can use the data to describe rough trends relating to the nature of the services.

As the nature of the care phase services has been studied through customer satisfaction and loyalty, this may not provide a complete picture of those services, but rather provides an approach to studying services. Therefore, the use of the studied services should principally be viewed from the perspective of how they reflect to customer satisfaction and general well being.

12.4 Evaluation of the Research

Yin (1994) concludes that construct validity, internal validity, external validity and reliability are commonly used to determine the quality of empirical social research. Yin (1994) summarises the four tests as follows:

- Construct validity; establishing correct operational measure for the concepts being studied
- Internal validity; establishing causal relationship whereby certain conditions lead to others
- External validity; establishing the domain to which the findings of a study can be generalised
- Reliability; demonstrating that the operations of a study can be repeated with the same results

Judgements about studies are made according to their validity, reliability, and credibility (Strauss and Corbin 1998). In the present study, much of the qualitative data have been quantified, while elements of qualitative research are also included, and quantitative and qualitative methods supplement each other. Holloway (1997) claims that validity and reliability are important elements when the truth and authenticity of a research is established. In qualitative research, understanding is more important than conventional notions of validity. Holloway (1997) argues that qualitative research should be assessed differently to quantitative research. In qualitative research, the important criteria are trustworthiness and authenticity. Qualitative research is trustworthy if it reflects reality and the ideas of participants. Trustworthiness is the qualitative researcher's alternative to validity and its elements are: credibility, transferability, dependability and confirmability. Credibility corresponds to internal validity and transferability corresponds to external validity. Dependability implies that there is an audit trail available, and confirmability implies that the findings are the result of the research and not an outcome of the biases and subjectivity of the researcher. Reliability is the extent to which an approach will generate the same results. Nevertheless, in this research Yin's (1994) recommendation on how to evaluate validity and reliability of a case study was applied, rather than qualitative research methods available in because the cases include quantitative data.

12.4.1 Construct Validity

According to Yin (1994), in order to meet the requirements of construct validity, an investigator must complete two steps: select the specific types of changes that are to be studied, and demonstrate that the selected measures of these changes truly reflect the specific types of change that have been selected. In order to ensure construct validity, three steps were taken: in data collection multiple sources of evidence were used, an attempt was made to maintain a secure chain of evidence throughout, and drafts of the case reports were reviewed by key informants. In the present study, several quantitative and qualitative data collection methods were used. The chief data collection methods included interviews, documents, archives, and direct observations. In the chain of evidence, the citations can be traced to the original source with the help of the case study database, which contains detailed information on the evidence. The circumstances were consistent,

as the data collection followed a uniform procedure. In all cases, the case study reports were first made available to the service managers for review, after which they were made available to the rest of the interviewees. However, there still remains possibility that the researcher may have interpreted certain data incorrectly. It is also possible that some customer persons may not have been entirely honest in their responses in interviews, possibly for commercial reasons.

12.4.2 Internal Validity

According to Yin (1994), internal validity is an issue for explanatory or causal case studies, and not for descriptive or exploratory studies. This case study is considered to belong to the category of descriptive and exploratory studies. The second concern is related to inferences, as the researcher makes an inference whenever an event cannot be observed. Internal validity is achieved when it can be demonstrated that there is evidence for the statements and descriptions made (Holloway 1997). According to Eisenhardt (1989), tying the emergent theory to existing literature enhances the internal validity. The present study has explored and described phenomena with respect to existing theories.

According to Jick (1979), “within-method” triangulation essentially involves cross-checking for internal consistency or reliability. In addition, Maxwell (1996) claims that validity is relative. It must be assessed in relationship to the purposes and circumstances. The ideas of Schofield (2000) support, Maxwell (1996), who identifies differences between quantitative and qualitative designs in the way they deal with threats to validity. In qualitative research, most threats to validity must be ruled out after the research has begun. This requires the researcher to identify specific threats. Maxwell (1996) identifies three major types of understanding: description, interpretation, and theory. In description, the main threat to valid description is inaccuracy or incompleteness of data. The audio recording of the interviews has largely solved this problem in the present study. In interpretation, the main threat to validity is imposing one’s own framework or meaning, rather than understanding the perspective of the subjects involved and the meanings they attach to their words and actions. Theoretical validity is enhanced by collecting and paying attention to discrepant data, and considering alternative explanations and understanding of the phenomena that are studied.

Furthermore, Maxwell (1996) highlights two broad types of threats to validity: researcher bias and reactivity. With regard to the former, the researcher should explain his possible bias and how he has dealt with it. Validity in qualitative research is a result of integrity. Because eliminating researcher influence in qualitative research is impossible, it is not necessary to attempt eliminate it, but to understand its influence and to use it proactively.

12.4.3 External Validity

The present study has certain limitations with regard to external validity. The selected cases of the study at least partly limit the generalisability of the findings. Because the case studies were limited to a single supplier company, the generalisations of the findings can be argued to a certain extent. Thus, four different customer companies were involved in the study. Furthermore, findings relating to the supplier were then compared with two more superficial cases in two other industries. The size of the samples were limited, as a limited number of interviews were conducted, in particular, access to the customer organisations was confined. This reduces the external validity of the results. All interviewees were selected to the same principle. The interviewed customer persons do not represent exactly the same organisational levels in their respective organisations, although they are quite close to each other. In particular, in the customer organisation access to the highest management could not be provided in all the cases.

External validity has proved problematical in many case studies, as single cases may offer a poor basis for generalisation. According to Yin (1994), this is an incorrect assumption because case studies rely on analytical generalisation. In analytical generalisation, the investigator strives to generalise a particular set of results to some broader theory. A theory must be tested through replications of findings in one or more cases. However, the present study was an inductive case study in which the cases themselves were replicated aside from their position in the life cycle curve. Indeed, Schofield (2000) claims that, in qualitative research, it can be impractical to make precise

replication a criterion of generalisability. Most work on generalisability in qualitative research has dealt with developing a conception of generalisability that is useful and appropriate for qualitative research. For the research findings to have a practical value, there must be factual situations that are of the type described in the norm, therefore cases were chosen to represent typical customer cases in the different phases of the life cycle curve, as that was the particular focus of the present study. According to Holloway (1997), it is characteristic for qualitative research to be tied to a particular location and place. Jick (1979) claims that "between-method" triangulation tests the degree of external validity. In the present study, both quantitative and qualitative methods yield similar results.

With regard to Case Maturity and Case Child, the questions asked were modified in order to achieve a better match with the focus of the study, as is allowed and even preferred (Eisenhardt 1989), and to be able to conduct the interviews within the agreed time. Cases Maturity and Child did follow the same procedural principle, varying only in certain details. Cases Youth and Infant were carried out using an identical format. Case Birth similarly followed the same structure, but was conducted at a higher organisational level and with fewer interviews.

Within the mobile telecommunications industry, the service manager concept can be said to increase customer's satisfaction. The benchmarking cases in the aircraft and health care industries give an indication of the generalisability of the results of the present study. The indications from the aircraft industry suggest that the results would be to some extent generalisable to the industries that have similar circumstances, dynamics, and market situation to those in the mobile telecommunications. On the other hand, the literature review of the health care sector reveals that the concept is unlikely to apply to all industries. The generalisability, or transferability as preferred in the qualitative research, of the results (Lincoln and Guba, 1985) depends considerably on whether practitioners and other researchers find the circumstances and dynamics of the care phase under consideration similar to those of the present study. The cases should provide a sufficiently detailed description to facilitate comparisons. In qualitative studies there can be identified Internal and external generalisability. Internal generalisability refers to the generalisability of a conclusion within the setting or group studied and external generalisability refers to its generalisability beyond that setting or group. Internal generalisability is an issue for qualitative case studies. The descriptive, interpretative and theoretical validity of the conclusions all depend on their generalisability to the case as a whole. External generalisability is frequently not a crucial issue for qualitative studies (Maxwell, 1992 and 1996).

12.4.4 Reliability

In the present study, a case study protocol was used. The researcher secured access to interview those persons who were considered important persons for the study, but despite this, on occasion some persons were not available and sometimes the time for the interview had to be shortened. In such cases, efforts were made to arrange further interviews, but even this did not always work out. The interviews were focused, open-ended interviews that closely followed the set of questions in the Appendix 2. There were instances whereby certain questions were not asked of the interviewees. A case study database was established with separate files for the data itself and for each separate case study report. Case study notes consist of the recorded interview files, the researcher's own notes, and the questionnaires completed by the interviewees (Yin, 1994).

The documentation of the present study describes in detail how the study was carried out in order to allow evaluation of the reliability of the results. Nevertheless, the problem remained that the position of the customers on the life cycle curve at the time has since changed as time has elapsed. However, reliability of the study can be evaluated with the existing material that would reconstruct also the conducted interviews. Qualitative and quantitative data collection methods were also used, which makes the findings more reliable.

The service manager concept has been adopted company wide and it has proven to be a useful solution. Kasanen *et al.* (1993) claim that the production of new knowledge in the form of normative applications is characteristic of constructive research. Kasanen makes a case for market-based validation of managerial constructions. It is recognised as a sign of the weak market test when a manager who is responsible for the financial results of his or her business unit willingly applies

construct in his or her decision-making. A semi-strong market test would require that the construction be widely adapted by companies. In the case of the service manager concept, the adaptation has now been extended to cover all the businesses in the mobile telecommunications infrastructure of the supplier. The adaptation can be considered to pass a weak market test, as the information has been kept from the competition. The adaptation is an indication of the usability of the concept as a plausible business solution for a particular care phase. The feedback from the business environment indicates that the service manager concept is appropriate.

12.5 Future Research

The present study shows that the more mature customers in the life cycle curve regard the care phase as an important factor for their customer satisfaction. The study identified care phase as an occasional major source of customer satisfaction. Some evidence was found suggesting that investments in the care phase could result in increased levels of customer satisfaction and loyalty. Therefore, the care phase warrants further study in the future.

The present study suggests that it may be possible to determine satisfaction-loyalty curves for the different services that were identified in the care phase. The shape of satisfaction-loyalty curves remains a subject for further research, which could increase the amount of the data and number of customers. Thus, one could carry out more extensive studies on services using statistical methods.

The present study concentrated on studying the relationship of customer satisfaction and customer loyalty. The connection of customer satisfaction, customer loyalty, and profitability requires research for it was discovered that different characteristics of customer satisfaction-loyalty have different effects on profitability, including the total profitability of the customer. An increase in customer satisfaction is likely to increase profits, but the influence of individual services should be further studied.

Martensen *et al.* (2000) provides interesting perspectives on the consumer markets for the telecommunications supplier. In Denmark, the customer satisfaction index values for mobile phones was relatively low compared to other indexes. The present study of the telecommunications markets in Denmark encourages the telecommunications infrastructure supplier to find out what practical implications the studied relationship of customer satisfaction and loyalty in consumer markets has for telecommunications infrastructure suppliers. What kind of strategies should those suppliers who seek customer loyalty among the operators seek? What kind of impact do customer satisfaction indexes have on the behaviour of the operator? Also worth studying is how the satisfaction of the customer's own customers in turn affects the loyalty and the profitability of the supplier, and what kind of new opportunities may arise based on improved knowledge of the market behaviour as a system.

Parasuraman and Grewal (2000b) ask questions relating to how technology will influence customer loyalty, whether it will become easier or more difficult to achieve customer loyalty. The framework presented by Parasuraman and Grewal (2000b) demands further research into how technology will affect the customer loyalty chain. Some have indicated that the Internet era will make the customer more impatient. Information technology and the Internet are anticipated to change the economics of service industries (Wymbs, 2000). The influence of new technology in transforming services represents a major area for further research. The effects of new technologies on services were briefly covered in the present study, but the data was too limited to evaluate how technology transformation would effect customer satisfaction and customer loyalty with regard to the services. What kind of effect will the Internet and its applications have on services, particularly in the care phase? Direct contacts of personnel with customers may create clear benefits to the company. On the other hand, self-diagnostics or remote-maintenance systems reduce the degree of technical ability required for after sales operations (Mathe and Shapiro, 1993). The dilemma is how to take care of the customer more effectively without losing the personal touch.

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14 Appendix 1

Internal Reports of the Supplier

Earlier research

Critical Incidents in Supplier's Customer Relationships
Supplier's Global Customer Satisfaction Summary 1999
Supplier's Global Customer Satisfaction Summary 2000

Archives

Supplier's User Group Data

Care Assessments

Customer Satisfaction Survey 1999 – Case Maturity
Customer Satisfaction Survey 1999 – Case Child
Customer Satisfaction Survey 1999 – Case Youth
Customer Satisfaction Survey 1999 – Case Infant

15 Appendix 2

Question List for the Interviews

Same questions both for the customer and the supplier

1) Customer Satisfaction and Loyalty per Service

The interviewer explains briefly what services will be evaluated.

Please, discuss possible issues related to each of the services. Services are tackled service by service (services have been identified with the service manager beforehand). The interviewer checks before each of the services that the interviewee is aware of the content of the service. Finally, ask the interviewee whether there would be other services that should be discussed as well.

The interviewee scores customer satisfaction and loyalty of each of the services as the service has been discussed through.

What does the interviewee think about customer satisfaction-loyalty in principal?

2) Two Most Important Services

What are the two most important services for the customer? Please, justify the rating of the services.

3) Importance of the Care Phase

Please, evaluate the relative importance of the care phase on customer satisfaction in relation to the total customer satisfaction. How do you see the relative importance of the care phase for the total customer satisfaction? Is the relative impact of care phase on the total customer satisfaction more, less or similar when comparing the relative share of the care phase sales to the total sales to the customer? (If required the interviewer informs the interviewee about the explained relative share of the care sales to the total sales.)

Does the supplier's care concept create competitive edge for the supplier?

If so, how permanent that competitive edge is estimated to be.

Does the interviewee have knowledge on the profitability of the care phase and individual services?

Please, describe your perception of the supplier's care phase concept. Does the customer have his or her own care phase concept? Please, describe it.

4) Supplier and its Service Manager's Role

Please, describe your view on the supplier's value added and value-added particularly in the care phase.

What are customer satisfiers?

What are customer dissatisfiers?

What the supplier does correctly and incorrectly in the care phase?

What is the value added of the service manager?

What the service manager should/should not do

What issues should be highlighted in the training of the service managers?

What is the model that produces the most benefit for the customer in the care phase (utilise the flowchart of the care management process)?

5) Customer-Supplier Contacts

Please, describe you contacts both in the internal organisation and to the external organisation (customer/supplier). Utilise the existing organisation chart, if necessary.

Who are the contacts of the interviewee in the care phase both in the supplier and in the customer organisation?

How frequently the interviewee interacts with the nominated persons?

Whose opinions the interviewee listens to?

6) Processes

Please, describe what kind of processes there exists regarding the care phase. What are the operator's business processes?

7) Competition

Have you got information on how the supplier's competitors handle their care phase activities?

8) Customer Compass

Clarify Customer compass in the areas:

- Customer portfolio management
- Value proposition
- Value-added role
- Reward and risk sharing

Discuss with the interviewee how close is the customer-supplier relationship? And in particular the relationship in the care phase.

16 Appendix 3

Supplier

Abbreviations in the supplier organisation including a brief description of the responsibility

MS	Service Manager; Service manager is responsible for the care phase
MA	Account Manager; Account manager is business responsible for the account both its sales and profitability
MC	Customer Service Centre Manager; Customer Service Centre Manager is responsible for the operation of the customer service centre of the country
MM	Manager of Marketing; Manager of Marketing is responsible for the marketing activities towards a number of customers either for the services or products
MO	Manager of Operations; Manager of Operations is responsible for delivering the services to the customer. Manager of operations is hired when the scope of the works is that wide that the service manager cannot handle the services alone. This manager reports to the service manager and is customer dedicated.
MP	Project Manager; Project manager is responsible for delivering a project to the customer
MR	Manager of Resources; Manager of Resources is responsible for providing the resources for the services that are performed. These resources are mainly higher-level experts and special attention is required to optimise the utilisation of these resources. This manager reports to the service manager and is customer dedicated.
XX 1	Any number after the abbreviation indicates an index number for the person. In practice, there have been several persons in the same position and with the same tasks. They have been differentiated with the indexes.

Customer

In customer organisations **the first letter** in the abbreviation indicates:

C	Chief level person, represents the highest level of interviewees
D	Director reports to the chief level
M	Manager reports to the director level
P	Person

In customer organisations **the second letter** in the abbreviation indicates:

D	Design
I	Implementation
M	Marketing
O	Operations
T	Technical
V	Vendor
1 .. 4	Numbers have been used to protect the identity of the person in case of chief level persons

In customer organisations the third letter (in lower cases) in the abbreviation indicates primarily different sub areas of technologies or secondarily business focus of the function:

b	sub area 1
d	sub area 2
n	sub area 3
q	sub area 4
s	sub area 5

17 Appendix 4

Communication Networks

CASE MATURITY

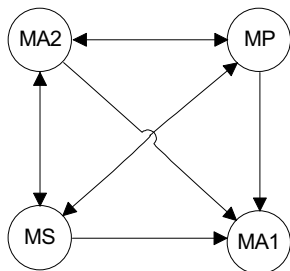


Figure 69. Communication network of the supplier's central persons²⁰

(MA1 = Account Manager, MA2 = Account Manager; MP = Project Manager; MS = Service Manager)

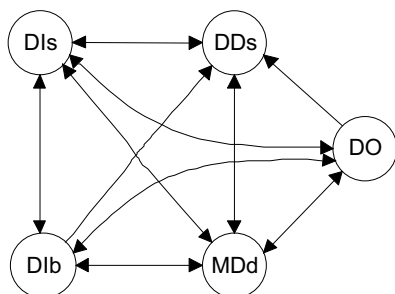


Figure 70. Communication network of customer Maturity's central persons²¹

(DDs = Director of Design; DIb = Director of Implementation; DIi = Director of Implementation; DO = Director of Operations; MDd = Design Manager)

²⁰ Figure 69 is derived from Table 9, as the persons selected as central persons in Table 9 were selected and their contacts with each other were drawn to Figure 69, as they had reported in the interviews.

²¹ Figure 70 is derived from Table 10, as the persons selected as central persons in Table 10 were selected and their contacts with each other were drawn to Figure 70, as they had reported in the interviews.

CASE CHILD

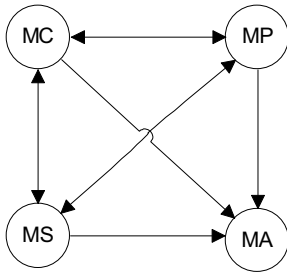


Figure 71. Communication network of the supplier's central persons²²

(MA = Account Manager; MC = Customer Service Centre Manager; MP = Project Manager; MS = Service Manager)

CASE YOUTH

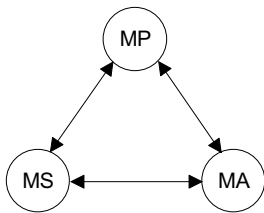


Figure 72. Communication network of the supplier's central persons

(MA = Account Manager; MP = Project Manager; MS = Service Manager)

²² Figure 71 is derived from Table 19, as the persons selected as central persons in Table 19 were selected and their contacts with each other were drawn to Figure 71, as they had reported in the interviews.

CASE INFANT

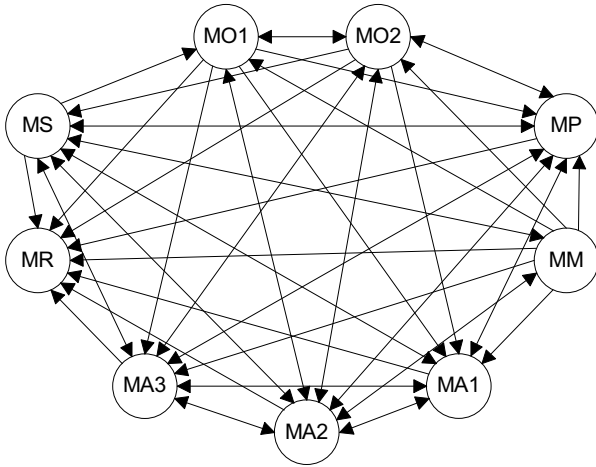


Figure 73. Communication network of the supplier's central persons²³

(MA1 = Account Manager; MA2 = Account Manager; MA3 = Account Manager; MM = Manager of Marketing; MO1 = Manager of Operations; MO2 = Manager of Operations; MP = Project Manager; MR = Manager of Resources; MS = Service Manager)

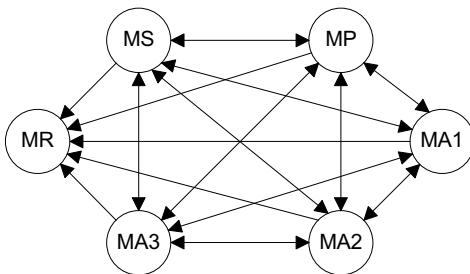


Figure 74. Communication network of the supplier's high activity central persons

(MA1 = Account Manager; MA2 = Account Manager; MA3 = Account Manager; MP = Project Manager; MR = Manager of Resources; MS = Service Manager)

²³ Figure 73 is derived from Table 24, as the persons selected as central persons in Table 24 were selected and their contacts with each other were drawn to Figure 73, as they had reported in the interviews.

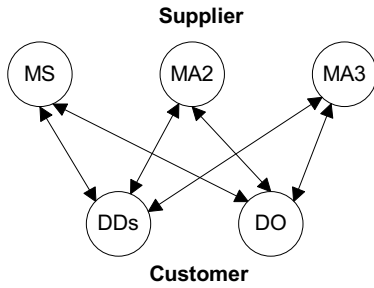


Figure 75. Simplified communication network of the supplier and customer Infant high activity central persons

(Supplier: MA2 = Account Manager; MA3 = Account Manager; MS = Service Manager; Customer: DO = Director of Operations; DDs = Director of Design)

18 Appendix 5

Illustration of the case companies

Case	Case Birth	Case Infant	Case Child	Case Youth	Case Maturity
Number of years the network has been in commercial use	0	1	2,5	4	7
Mobile phone penetration in the country (1999)	15 %	40 %	35 %	15 %	65 %
Number of operator's subscribers (percentage of the population)	0 %	1-3 %	10-15 %	5-10 %	Over 30 %
Market share	0 %	3-10 %	20-40 %	25-50 %	Over 50 %
Size of the network	No network	Urban areas	Nation-wide	Nation-wide	Nation-wide

Source: EMC Cellular Subscribers Penetration 1999

19 Appendix 6

Necessary elements for the success of care phase

	Case Birth	Case Infant	Case Child	Case Youth	Case Maturity
Perceived success of the account	n/a	Poor	Good	Good	Good
Financial results of the care phase	n/a	Good	Average	Good	Good
Customer satisfaction with care	n/a	Poor	Average	Average	Good
Number of contacts within the company	Moderate	Large	Large	Large	Large
Number of contacts with customers	Few	Large	Moderate	Large	Moderate
Customer's focus on care	Weak	Moderate	High	High	High
Importance of care	n/a	High	High	High	High
Service manager's role	Weak	Moderate	Moderate	Strong	Strong
Importance of service A	n/a	High	High	High	High
Importance of service B	n/a	Weak	High	High	Moderate
Importance of service C	n/a	Inter-mediate	High	High	Moderate
Importance of service D	n/a	Moderate	Weak	Moderate	Moderate
Importance of service E	Customer's structure	Customer's structure	Customer's structure	Customer's structure	Customer's structure
Importance of service F	n/a	Moderate	Weak	Weak	Weak
Importance of service manager	n/a	Weak	Moderate	Moderate	Moderate

Case Birth was in its initial stages, in certain areas no evaluation could be carried out, because the customer could not be interviewed. This is indicated by "n/a", i.e., "not available" in the individual cells.

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