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Measuring the Impacts of Electronic Commerce on Business
Firm-Level Case Studies in Two Norwegian Industries

by

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Foreword

This report documents the Norwegian part of the OECD-study on the impact of electronic commerce on businesses - *The Electronic commerce Business Impact Project* [EBIP]. The research is carried out as part of two research projects financed by the Research Council of Norway on economic consequences of electronic commerce on business: 1) Economic impacts of e-commerce, headed by Gunnar E. Christensen, and 2) Cooperation and strategic partnerships for e-commerce, headed by Leif B. Methlie. The OECD-study which is case-oriented and ”business-to-business” oriented, was meant to cover the explorative parts of the two Norwegian research projects.

Two companies in two different sectors have been studied in the Norwegian country study: Den norske Bank (Mutual Funds) in the banking sector and Berg-Hansen in the travelling sector. Leif Jarle Gressgård has been instrumental in these studies while Kjetil Melsom Olsen has contributed to parts of the empirical work.

Gunnar E. Christensen and Leif B. Methlie have participated in the EBIP project group for the OECD study.

Bergen in September, 2001

Gunnar E. Christensen
Leif B. Methlie
Leif Jarle Gressgård

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Abstract

The objective of this research was to assess the dynamics and impacts of electronic commerce in the value chains of products and services. The research was conducted as part of a multinational OECD-project, which aimed at improving the overall understanding of electronic commerce on business. This research project was based on case studies of selected firms in various industries, and adopted a transaction structure approach. More specifically, it aimed at investigating how and why certain groups of traders exchange goods and services in specific ways, and how new information and communication technology influence the interaction between the participants in the value chain. Basic to the transaction structure approach is the observation that the implications of business-to-business electronic commerce will not be the same for all economic actors, but that it will vary considerably across sectors and different value chain participants.

As proactive firms regarding implementation of electronic commerce solutions are likely to influence the evolution of buyer-seller relationships within the relevant value chains, examining changes in these firms' transaction structures are likely to result in knowledge of overall changes that will occur as a consequence of the use of new technology to conduct business. On this basis, the research was based on case studies of proactive firms in the selected sectors. The Norwegian case studies were selected from the traveling industry and the financial services industry.

The results of the studies indicate that new technology are likely to have major consequences for single firms as well as for entire industries by altering the way products and services are produced, distributed and sold. More specifically, we experience an evolution towards more specialized value chain participants, more customized and differentiated products and services, and an overall increase in customer focus. However, these changes are at a preliminary stage, and it is to early in the process to make conclusions regarding actual effects of electronic commerce on the travel and financial services industries.

1. Introduction

1.1 Background: Research on Business-to-Business Electronic Commerce

As technological innovation may alter business structures and practices in ways that favor the commercial interests of some actors over others, the rapid growth of Internet use is expected to result in a redefinition of business models and a reconfiguration of relationships within as well as between sectors.

Products and structures of electronic commerce cover two main categories: consumer-oriented commerce (B-C), and business-to-business commerce (B-B). The latter model includes all transactions between companies that occur by use of electronic networks. This can encompass any form of commercial transaction that is related primarily to providing goods and services to firms and organizations who themselves procure these goods and services for commercial purposes. Business-to-business customers add value to the items they procure, either directly through the transformation, configuration or distribution of raw materials, components, finished products, services and human resources, or indirectly through the consumption of procured items within production processes. The former model represents the most touted applications of electronic commerce, and includes aspects like remote shopping, banking, stock brokerage, and different information services (e.g. entertainment and education). However, both near term and future growth of electronic commerce is likely to be determined by the business-to-business segment (OECD, 1999). This latter model, which is expected to grow from $114 billion in 1999 to $1,5 trillion in 2004 (Baron et al., 2000), accounts for at least 80 percent of total electronic commerce activity (OECD, 1999).

In spite of the general acknowledgement that the bulk of the Internet's economic potential resides at the business-to-business level, most research on Internet-based commerce concentrates on the consumer interface. In 1997, an OECD-report noted several key questions for research on the business-to-business segment, including long-term consequences for electronic commerce on competition and competitiveness, the effects on prices, and implications for the institutional structures that govern and facilitate commercial activities. However, research has made only modest contributions to our understanding of these issues.

1.2 The Electronic Commerce Business Impacts Project [EBIP]

This research is part of *The Electronic commerce Business Impact Project* [EBIP][1], which aims at improving the understanding of the impacts of electronic commerce on business. More specifically, the objective of the research project is to assess the changes in structure of and control over economic value chains as a result of the introduction of electronic commerce, and to understand the implications of these changes for business, the public interest and policy. Most research on this area has tended to be anecdotal, fragmented and not comparable across sectors and countries. In contrast, this project aims to improve the comparability of firm-level case studies by applying a common conceptual and methodological framework for conducting case studies. The results of these studies will be used to develop a set of national and cross-country research reports in a common analytical framework, which may improve the understanding of the impacts of electronic commerce on business.

The research framework focuses on how and why specific groups of traders exchange goods and services in specific ways, and how evolution of technological mediation of commercial relationships may affect the individual actors and the value chain as a whole. Further, the research directs the attention to the relationships between producers, intermediaries, and customers in business-to-business contexts, and it is oriented towards fundamental research questions concerning how the introduction of electronic commerce might affect the patterns of control exerted by market participants in various value chains. The consequences such changes might have for business, the public interest and policy, are also important aspects. The objective is therefore to focus the theoretical and empirical perspectives on a single problem, namely how to observe patterns and rates of change as an increasing range of business practices, processes, and structures come into contact with electronic commerce.

1.3 Organization of the Report

This report focuses on the changes in the value chains of the financial services industry and the travel industry in Norway, due to the introduction of business-to-business electronic commerce. The conceptual and methodological frameworks underlying the Electronic Commerce Business Impact Project are presented in chapters 2 and 3, while the reports from

[1] OECD: Working Party on the Information Economy [WPIE].

the Norwegian financial services and travel industries are included in chapters 4 and 5. Finally, in chapter 6, the report is ended by a short summary of the study and final conclusions that can be drawn from the research process. The data reporting sheets representing the standardized reporting format for the case studies are included in an appendix.

2. Conceptual Framework

2.1 The Transaction Structure Approach: Basic Concepts

All commercial processes involve transactions between buyers and sellers in which value in goods and services is exchanged. A transaction can be defined as any exchange between participants in a market that is directly or indirectly related to the acquisition of goods or services, irrespectively of whether these goods or services are finally acquired. Thus, the main operational factor in a transaction is the *intent* to provide or acquire goods and services. Transactions occur in structures, which are determined largely by the relationship of the involved buyers and sellers in the process of exchanging goods and services. The basic notion underlying the transaction structure approach is that actors position themselves strategically in the market through the control of *transaction points* (see figure 1 on page 11) where various types of exchanges occur that relate to the acquisition of goods and services (OECD, 2000). Control of a transaction point implies that buyers and sellers are able to access the required transaction points such that they can initiate and complete transaction procedures on reasonable equitable terms.

All economic transactions consist of two related types of operations - transaction preparation and transaction completion. *Transaction preparation* involves placing information about products and services in the market, and retrieval of this information by market participants. In practice, transaction preparation involves all information exchanges that are related to a transaction. *Transaction completion* involves two components: settlement and logistics. Settlement refers to ordering, billing, and the transfer of payments. Logistics refers to the transfer of products and services from sellers to buyers both within supply chains and with final customers. In addition to transaction preparation and transaction completion, it is necessary to consider a third transaction component: *production support.* In electronic commerce, production support involves competencies in the capability to acquire transaction related-information, and the capability to organize, process, and apply it. It also involves competencies in using transaction-generated information to assess market performance and trends, and applying this knowledge to support the development and marketing to new products and services.

The production and acquisition of a typical product or service generally involves a complex transaction structure, which can be negotiated by many possible configurations of actors. Within this structure, both buyers and sellers initiate various transaction sequences that are intended to culminate in the placement of goods and services with their intended users. Transaction preparation, transaction completion, and production support are all parts of these sequences, but the relationships between these "zones" are not linear. Information generated by transactions in any zone can inform actions in any other zone, and one of the principal expectations of electronic commerce is that the ability to gather and process transaction-generated information more efficiently across this spectrum will be a source of new commercial opportunities.

Transaction structures are situated in a *marketplace* (see figure 1 on page 16) – defined as a concrete social and economic milieu in which actual transactions take place, and in which the characteristics and dynamics of actual transaction points can be observed through qualitative and/or quantitative research. Each individual marketplace can generate specialized transaction characteristics and structures. The types of interactions between buyers and sellers in any given marketplace vary according to the characteristics of the transaction points. Some marketplaces are "physical" in that they require the co-location of buyers and sellers before the exchange of value in goods and services can take place. Others are "virtual" in that co-location is not a necessary condition – transaction points in these marketplaces are designed to accommodate logical rather than physical interactions between buyers and sellers.

The design of the marketplace in terms of how transaction points are accessed and used influences the level and quality of interactivity between buyers and sellers. In turn, this limits the extent to which transacting parties control the production, processing, storage, and retrieval of transaction-generated information. Marketplace design also determines the physical and virtual boundaries within which new transaction structures can develop.

Technological change in an electronic commerce context can occur in the zones of transaction preparation, transaction completion, and production support. The application of technology to any transaction point in any of these zones may be considered to be an innovation to the extent that it represents significant change in the way of doing business. Examining business relationships in terms of their transaction structures will therefore provide a useful general framework for analyzing the historical, current, and future effects of electronic commerce

implementations. The transaction structure approach is therefore oriented to exploring the interplay between technological evolution in the physical and/or virtual design of the marketplace, and evolution in the relationships between buyers, sellers, and intermediaries. More specifically, it is concerned with exploring how virtual and physical marketplace characteristics interact.

2.2 Innovations in the Transaction Structure

Innovations in the transaction structure can have a variety of outcomes. Some will appear in the transaction structure itself (in the form of reduced transaction costs, increased speed, flexibility, or reliability), and others will appear in the form of further innovation outside of the transaction structure. Electronic commerce may support or stimulate *product innovation* – i.e. it may facilitate the development of new products and services. It may also lead to *process innovation*, related to how products and services are designed and made. Finally, it may facilitate *relational innovations*, referring to new modalities and methods for buyer-seller interactions in the marketplace.

Most process and relation innovation are in some way related to efficiency considerations and best practice. This kind of knowledge tends to be fungible, that is, it tends to be easily transferable to competitors who can learn from first-movers by example. Indeed, where it is particularly obvious that a new technology or procedure would benefit all actors in a marketplace, collective action is a possibility, as when competitors establish a common technical standard or agree to abide by an industry-wide code of practice. These t*ransferable effects* tend to generate highly dynamic network phenomena that encompass wider groups of actors in a given marketplace. On the other hand, strategic advantages tend to flow from innovation that is *non-transferable,* or at least asymmetrical in that its benefits do not apply in the same way to all actors in the value chain. It is widely accepted that most strategic advantages are generated primarily by product innovation – the development of new products and services. In electronic commerce, however, there is a particularly close interrelation between products, processes, and relations. Because of this, innovation in one area can spread extremely rapidly throughout the others.

Mapping the relationship of firms to electronic commerce is largely a matter of demonstrating that, at key transaction points in the value chain, relationships can be observed between innovations in the transaction structure (the zones of transaction preparation, transaction completion, and production support), and product, process, and relational innovations.

2.3 Value Chain Perspective

In an electronic commerce environment the boundaries of firms can become difficult to define, leading to debates about the nature of the relationship between value chains within firms and "value systems" between firms. Moreover, difficulties exist in applying the value chain concept in any form to service industries where the source and characteristics of value can be difficult to determine (Stabell & Fjellstad, 1998). In this report, the value chain concept is used to describe the commercial process through which the value is added to products and services. This draws the attention away from a purely logistical understanding of the concept. A value chain is defined as a series of production tiers, each tier producing items that are substitutable in terms of the function they assume in a final product or service. The units of production in each tier are firms and organizations. The chain culminates in a specific product or service in which the value of the individual components and processes has accumulated.

The transaction structure approach focuses on value chains of products and services rather than on individual firms and sectors. As such, firms that produce the same type of products or offer the same type of services are involved in the same basic value chain dynamics. As many value chains involve input from firms in several sectors, one of the main advantages of this approach is that it allows these dynamics to be contained in a discrete unit of analysis and related to a specific type of product or service. Figure 1 (below) illustrates the value chain dynamics, that is, the various ways and means by which value is added to goods and services. The point is to show that actors in each tier in the value chain control units of productive activity that add value to the products and services. Between each tier is a marketplace through which goods and services pass as they go through the value chain. Marketplaces coordinate transactions between the individual production tiers. Intermediaries facilitate transactions in marketplaces. As such, they may not add use-value, but they may add value to the transaction itself by performing specialized transaction support functions. This is in

contrast to approaches that perceive intermediation to be primarily a source of lost value transaction inefficiency.

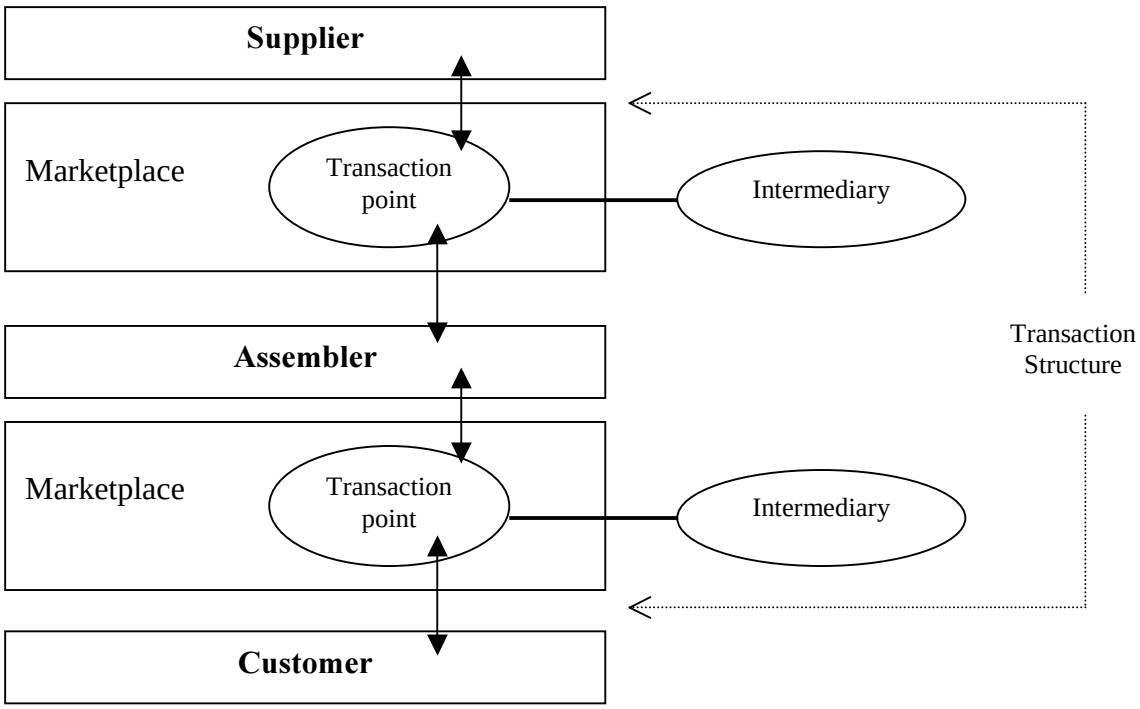

Figure 1: General Value Chain

It is important to note that in different marketplaces, the same firm may operate in different relationships to other actors. Firms may be buyers in some marketplaces and sellers in others, and may display different characteristics depending on whether their presence in a specific marketplace is oriented to demand-side or supply-side criteria.

This project is primarily focused upon what occurs at specific transaction points as the result of proactive and reactive behaviors of participants in a given marketplace. Taken as a whole, these behaviors may indicate change in the structure and operation of this marketplace. The actions observed in all of the marketplaces in a transaction structure indicate the implications for evolution in the value chain as a whole.

2.4 Transaction and Product/Service Characteristics

Different sectors can be classified according to the different kinds of roles electronic commerce is most likely to play in them. The e-commerce potential of individual sectors can be assessed both with reference to the characteristics of key products and services in the sector, and to the characteristics of the transactions related to these products and services. The type and extent of electronic commerce implementation is likely to vary depending upon the configuration of key products/services and transaction characteristics in any sector.

Product and service characteristics influence buyer-seller relationships throughout the value chain, and they can help to define the likely quality and extent of electronic commerce applications in given sectors. The most basic classification of product/service characteristics is into the categories of *material* (products defined mainly to the physical attributes, or services related mainly to the physical attributes of products) and *digital* (products and services that can be produced, stored and distributed in digital form).

Transaction characteristics relate to the primary modes in which commercial transactions are conducted. In this case, a basic distinction between *routine transactions* and *negotiated transactions* can be made according to the type of interaction that is required from buyers and sellers. The former type refers to transactions where the prescribed terms for acquisition of products or services are essentially the same for every participant in the value chain. In contrast, the latter transaction type implies that the buyers and sellers have to establish the terms (or at least parts of the terms) of the transaction each time the product or service is to be acquired.

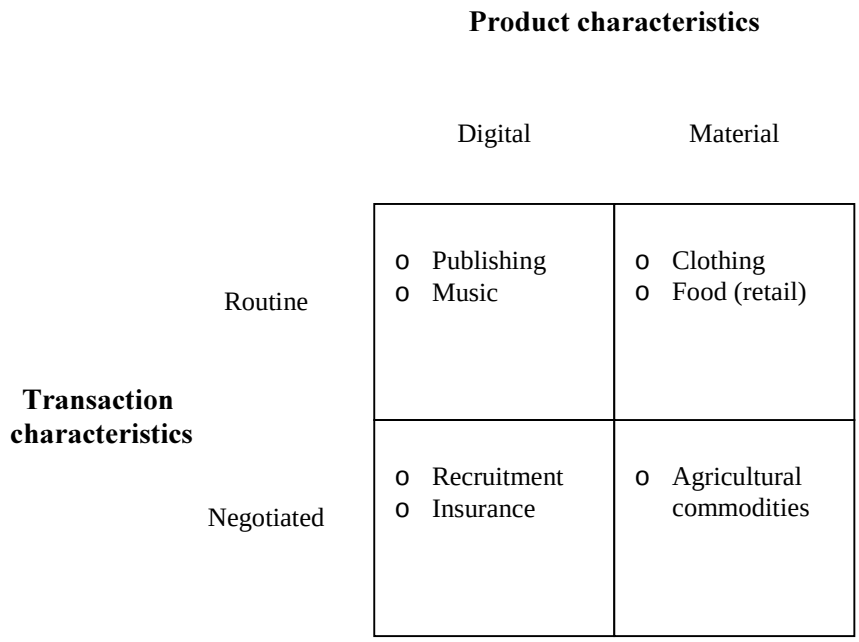

Figure 2: Classification of sectors based on product and transaction characteristics.

The possibilities, motivations and requirements for engaging in electronic commerce are likely to depend on the characteristics described by the quadrant that a particular sector belongs to. For sectors in the digital/routine quadrant, much of the potential for process efficiency gains, cost savings, and the development of new business models, is linked to the possibility that (in principle) products and services could be transmitted directly in digital form to a large number of customers on standardized terms. Sectors in the material/routine quadrant require retention of physical supply and distribution channels but could achieve benefits from electronic commerce through improved logistics, or by developing new business models for managing routine transactions with greater numbers of customers. Sectors in the digital/negotiated quadrant operate in a predominately digital product/service environment, but must engage in continuous negotiations with suppliers and customers. For them electronic commerce may offer benefits in the form of minimizing or eliminating the need for co-location of agents and customers as terms and prices are negotiated. Sectors in the last quadrant, material/negotiated, stand to gain from electronic commerce in the form of improvements in resources and logistics management, bidding and settlement procedures, etc.

It is important to note that the various marketplaces in a given value chain will not all fall into the same quadrant as the product or service to which the value chain is oriented. Therefore, each value chain must be defined and classified for research purposes in terms of a product or service that is based firmly in a specific industry sector.

3. Methodological Framework

3.1 The Transaction Structure Approach as Basis for Research

The possibilities for highly proactive electronic commerce implementations by firms who have become significant actors in given value chains, to influence the evolution of buyer-seller relationships within these chains, are substantial. By examining changes in the relationship of proactive implementers to key transaction points in key marketplaces, indicative knowledge can be gained of changes that are likely to occur in the transaction structures of entire value chains.

It follows that a reasonable staring point for research using the transaction structure approach is to identify firms that are successful in implementing electronic commerce. In this context, "success" is defined solely in terms of the application of electronic commerce such that significant effects can be observed in the value chain. By this definition, successful firms are likely to also be among the most proactive electronic commerce implementers. Their strategies will likely revolve around minimizing the effects of loss of control at some transaction points, and maximizing control at others. The starting position of a firm in this respect is significant as it helps define the range of complementarities and substitution possibilities that might be exploited strategically.

Case study research can be motivated by choosing firms whose "success" in acquiring and implementing electronic commerce capabilities can be verified by obvious performance indicators (such as new products, increased sales volumes, higher market share, etc.) For more systematic sector-based studies, detailed background research may be required in order to define the key value chains and to identify examples of "successful" electronic commerce implementers.

Various value chain dynamics could form up as a result of proactive electronic commerce activities by successful firms, some of which could be intermediaries. Proactive behavior by a firm in one tier of a value chain can create incentives to respond, both for firms in the same tier and in other tiers. Other types of proactive behavior can be collective. For example, groups of firms occupying similar positions in a value chain can elect to create a common

electronic commerce interface. Accordingly, the research regime is centered in the first instance on the actions of successful firms at key transaction points in key marketplaces.

Part of this research will focus on selecting relevant products and services, constructing value chains, and defining the relevant marketplaces. Another part will focus on identifying successful firms, as well as other firms in the value chain with which the successful firms transact. The remaining research activity will involve assessing and comparing the behaviors of these firms. Relative to each key transaction point, research protocols and questions will describe the nature and extent of their electronic commerce activities, and explore the motivating factors, obstacles, and effects.

3.2 Research Design and Study Plan

The research design and study plan apply the conceptual building blocks of the transaction structure approach presented earlier in the paper. This research design consists of three distinct stages: value chain mapping, field research, and analysis and validation.

3.2.1 Value Chain Mapping

The intention of this stage is to map the sectors in the study in general terms according to the characteristics of their key products and market structures. The objective is to identify and describe the structures and value chains for a selection of product areas that are indicative of the economic performance of the chosen sectors. This involves mainly the mobilization of existing knowledge about the structure and dynamics of the sectors, and it is based on desk research, complemented as appropriate by interviews with sector experts in professional organizations, firms and government.

The value chain mapping procedure has two components:

- A general description of the industry and market structures and trends relevant to the chosen sectors. It is important to gather information about structural matters as the number of firms in the sector, the concentration or distribution of economic activity, the size of firms in different production tiers, barriers to entry, stability of the relations

between firms, special national conditions or considerations, etc. Information about significant trends in the sectors, like internationalization, industry restructuring, etc., is also required.

- A detailed description of the value chain structures relevant to the chosen sectors. The value chains in each sector will be constructed such that all of the major inputs and outputs are captured (regarding the selected products/services), that a representative selection of large and small firms that participate in the sector is encompassed for the purpose of conducting the survey, and that the most important linkages with other sectors are brought into scope. Further, the value chains will be constructed in enough detail to identify and describe both the characteristics of the production tiers and the supply relations pertaining to each tier, the marketplaces in which goods and services are exchanged between tiers, and the intermediaries that operate in the relevant marketplaces.

The value chain mapping serves the dual purpose of preparing the researchers for the forthcoming interviews, and of providing a major portion of the background that will be necessary in order to interpret data gathered during the field research.

3.2.2 Field Research

By gathering information directly from proactive firms, and from a selection of their main suppliers and customers, the field research stage aims at producing a detailed data set that captures the experiences and behaviors of the surveyed firms with respect to electronic commerce. The data collection strategy is to collects as much background information as possible through desk-based research, in order to allow field research to concentrate on collecting in-depth information on the practices and experiences of firms in the sectors that would not be obtainable except by direct interview.

The deliverable of this stage consists of completed data reporting sheets (see Appendix). In some cases reporting will consist of text summaries of a particular interview topic, and in other cases the responses will be entered into pre-formatted tables. It is important that the firms selected for interview are as representative as possible of the electronic commerce

activities in the value chain. The selection of firms must be made in order to ensure that there is a reasonable description of network relations between firms that covers as much of the value chain as possible.

The research will employ desk-based research to compile background information on the firms selected for the study. Such information can be gathered from predominantly publicly available information on individual firms and on sector characteristics and performance. Documentation like company annual reports, public statistics, etc. may form the basis for these studies. Background information is required in three areas:

- The position of the firm in the value chain – an area which is concerned with discovering how a firm relates to its various competitors, customers, suppliers, and intermediaries an a given value chain.
- The business profile of the firm – an area that focuses on the main factors that influence the business characteristics and processes of the firm. This may be product characteristics, transaction characteristics, business model, external and internal business processes, and production factor inputs.
- The technology profile of the firm – an area that relate to the technology that is used by the firm in order to conduct electronic commerce or to support related business functions, both in terms of what is used now and what planned for in the future.

After the desk-based research, the firms will be interviewed using a semi-structured, open interview format. This will be administered in a face-to-face mode with representatives of the proactive firms, and in shorter telephone interviews with the selected suppliers and customers of these firms. The interview structure comprises three main question areas:

- Motivations – is concerned with the firms' motivations underlying their engagement in electronic commerce. Aspects that are relevant to this area are the firms' expectations regarding the effects of electronic commerce on the transaction process (i.e., transaction completion, transaction preparation, and production support) on general business processes (i.e., product innovation, process innovation, and relational innovation), and on the general business environment in the value chain.

- Obstacles and advantages – focuses on the factors that impeded and facilitated progress and firms efforts to achieve electronic commerce goals. These factors may be related to the telecommunication infrastructure, regulatory conditions, internal and external conditions, strategic aspects related to competitiveness, and government policy. In addition, the interviewers should explicitly pose the question: What is the most useful measure the government can take to stimulate the uptake of electronic commerce?
- Impacts – aims at clarifying and displaying the outcomes that can be significantly or uniquely attributed to the firms' involvement in electronic commerce. More specifically, both qualitative and quantitative measures regarding the impacts of electronic commerce on business functions related to the transaction process, general business processes, and the general business environment in the value chain, should be identified. Additionally, information regarding gains or losses in employment, turnover and profitability that can be uniquely or significantly attributed to electronic commerce, should be collected.

In each question area, the interviews must be conducted as appropriate according to field conditions in different firms, sectors and countries, but the standardized reporting sheet (see appendix) will function as a general guide to the type and extent of information that is required.

3.2.3 Analysis and Validation

In this stage, the data collected in the field research stage will be interpreted and analyzed with reference to the sector maps as assembled in the value chain mapping. The basic analytical routine for this stage involves a summarization of the data collected in the field research, a conceptual modeling of the knowledge gained from the case studies with reference to the value-chain maps, and a validation of the results from the previous steps through consultation with representatives of firms participating in the study and external experts.

The intention is to show where innovation through electronic commerce occurs, and demonstrate the patterns, trends, gaps, and opportunities that result from this innovation. A major aspect of this last stage is to demonstrate how the dynamics of electronic commerce as

indicated in the case studies relate to the value chain as a whole. The results are to be modeled conceptually to show where significant changes in the configuration of value chains in the selected sectors may have occurred, or may be occurring. The deliverable of this stage will be detailed final reports on electronic commerce in each sector, containing four main sections:

- Introduction and background – should contain a concise description of the sectors and product areas chosen for the study, and a general description of the national and international environment in which the chosen sectors operate.
- Value chain analysis – should describe the characteristics of the selected product group and the transaction structure. It should further describe the characteristics of the value chain (the production tiers, the marketplaces, the intermediaries, and the key transaction points), the main conditions, dynamics and trends in the sectors, and an indication should be given regarding the chosen firms position in the value chain.
- Case study presentations – should present the case studies of the interviewed firms on basis of the contents of the data reporting sheets.
- Modeling and exploratory scenario building – should show the likely implications of firm behaviors as demonstrated in the case studies for the sectors as a whole.

4. Sector Report: The Norwegian Financial Services Industry

4.1 Introduction

International banking and financial services have been characterized by extensive structural changes for a long period of time. Globalization, liberalization, and new technology are the driving forces of an evolution towards enhanced competition based on increasingly harmonious regulations. This has resulted in the formation of international finance enterprises, which operate across frontiers and former business sectors. The insertion of the euro intensifies the competition further, and amplifies the pressure to erase overcapacity in the industry. Change will be the normal condition for the future financial services industry.

The government participation in the Norwegian financial services industry is comprehensive. The development in Norway has gone in the opposite direction of the international trend characterized by privatization and market orientation of state managed business activity, which may be disadvantageous for the structural development of the Norwegian financial services.

4.1.1 Commercial Banks and Savings Banks

There are two different types of banks in Norway, savings banks and commercial banks. Traditionally, the savings banks where banks for private individuals, while the commercial banks focused on industry and commerce customers. Today, most of the banks focus on both private individuals and business customers, and offer services like loans, deposits, investment management, trading/arbitrage, payment services, financial advisory services, foreign currency- and capital market products, and different insurance services. The difference between the two types of banks is mainly the ownership structures. Stockholders own the commercial banks; it is joint-stock corporations. The Norwegian savings banks have certain fundamental features in common and their profile is different from the commercial banks. A fundamental aspect is the idea of cooperation between independent units. The savings banks have a common identity that emphasizes closeness to customers, local roots and responsibility.

The savings banks in Norway are organized as independent foundations, i.e. there are no stockholders or traditional owners of the assets that the bank have. Nor is anyone entitled to

any share of the savings banks' profits. The savings banks' net capital mainly consists of profits from previous years that are ascribed to the banks' funds. However, in the eighties the savings bank where also entitled to draw net capital from the market by call for primary capital certificates[2].

There are 130 savings banks in Norway, a number that has been substantially reduced from more than 600 in the late sixties. The reduction is due to mergers of savings banks to form larger, more powerful units, a tendency that has become weaker during the last years. The larger regional savings banks represent a major share of savings banks' aggregate total assets. The 15 largest savings banks represent more than 75 per cent of the total assets in the savings banks industry.

During the last decade the savings banks have established a comprehensive cooperation in technological services and other financial services in order to achieve economies of scale. Today, all the savings banks are more or less tied to one of three distinct groupings in the sector. The largest group when it comes to total assets is the Union Bank of Norway (Sparebanken NOR) and its associated savings banks. The second group, SpareBank 1 Gruppen, consists of four large regional savings banks and several other medium-sized banks. The third group consists of around 80 small and medium-sized savings banks, and is called Terragroup.

In the private consumer market the savings banks have the largest market share in both savings and loans. Traditionally, savings banks have been regarded as banks for the private consumer, but throughout the 90's the savings banks have increased their market shares in the commercial sector, especially in the SME-market.

[2] The primary capital certificates are securities with many similarities to shares. The main difference is that such certificates do not give property rights to the company worth in the issued savings bank. The primary capital certificates have become an important part of the savings banks' capital base, constituting approximately 23 percent of the total capital base [01.01.2000].

4.1.2 Major Actors in the Norwegian Financial Market

During a critical financial period for the banks in the eighties, many questions regarding commercial structures in the Norwegian financial industry where solved. We got two major savings bank groupings, Sparebanken NOR and Sparebanken 1 Gruppen. The two archrivals Den Norske Creditbank and Bergen Bank grudgingly became Den norske Bank and Svenska Handelsbanken established itself in Norway. Fokus Bank has later become Danish. The newly restructured banks then merged with insurance. Vital became part of Den norske Bank, Storebrand established its own bank, and Gjensidige and Sparebanken NOR became Gjensidige NOR. Den norske Bank has recently absorbed Postbanken whilst Christiania Bank og Kreditkasse has merged with Merita Nordbanken and UniBank in Denmark to become the Nordic banking group NORDEA.

The result of all the mergers is a financial services industry with a good balanced competitive structure with two to four powerful players in most segments of the market.

The ten biggest banks in Norway based on total assets value. (December 1999)	
Den Norske Bank	313339 (NOK million)
Kreditkassen	210817 (NOK million)
Sparebanken NOR	196356 (NOK million)
Fokus Bank	44314 (NOK million)
Sparebank 1 SR-Bank	36397 (NOK million)
Sparebank 1 Nord-Norge	28615 (NOK million)
BN bank	27459 (NOK million)
Sparebank 1 Midt-Norge	26373 (NOK million)
Sparebank 1 Vest	26255 (NOK million)
Svenska Handelsbanken	26108 (NOK million)

Source: Norwegian Financial Services Association (FNH).

On a consolidated basis the commercial banks recorded a profit before taxes of NOK 8 billion in 2000. This is an improvement of 11 percent compared to 1999, and corresponds to around 1,12 percent of average total assets. The saving banks recorded an operating profit of NOK 9,5 billion before taxes on a parent company basis in 2000, which was 1,81 percent of average total assets, and an improvement of NOK 1,3 billion compared to 1999.

For both commercial banks and savings banks the return on equity at the end of 1999 was around 15 per cent (converted to annual basis).

4.1.3 Savings and Investment Management

This report will focus on mutual funds as a savings service in the Norwegian bank sector. The size of the entire savings market of the OECD countries currently measures roughly US$35tr. These assets are managed by insurance companies, mutual fund groups, pension funds, and other institutional providers of long-term savings vehicles. The overall level of annual inflows into this whole arena currently exceeds US$3tr. Between 1990 and 1998, the compound average growth rate of these assets equalled 12 per cent, and this growth is expected to continue.

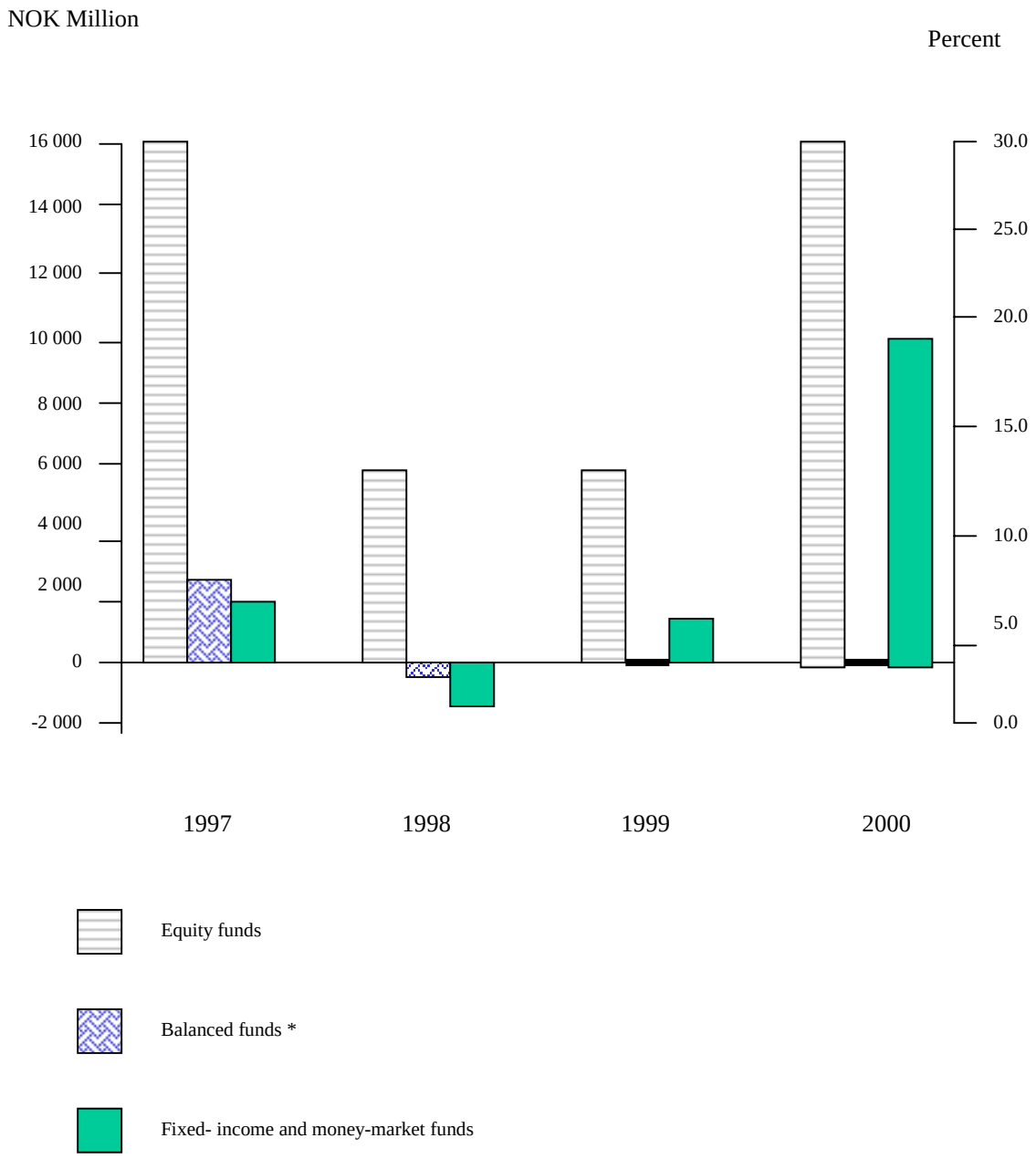

Figure 3: Total Norwegian mutual fund market, net new subscriptions

* *A balanced mutual fund is a fund composed of both a variety of common stocks (equities) and fixed income securities (debt instruments such as bonds and debentures). The objective of this type of investment is to minimize the risk without sacrificing the possibilities of long-term growth. These funds invest their money in specified proportions, in fixed income securities, and common stocks. For example, the fund may limit its investments to 60% debt and 40% equities. As a result, it does not show as large a gain during a rising market as do most common stocks. On the other hand, it will usually suffer fewer losses in a declining market.*

The combat of people's savings is getting tougher. The combination of a general increase in prosperity and an ageing population that focus more on saving than younger people, have contributed to increase the part of banks' deposits and deposit capital related to savings. Particularly saving by shares- and mutual funds investment has experienced a large growth in resent years, and the internationalization of financial services has resulted in an expansion of financial institutions' activities related to investment services.

4.1.4 New Technology – Online Services

The financial services business has undergone major restructuring the last decade, yet this process has just begun. The Internet has major influence on financial services and shows every sign of becoming the distribution channel across all product categories and business models over the next decade.

The industry is one of the most open and most technology-driven information-based businesses we have, thus electronic services within commerce and finance are regarded as one of the big growth areas in the years ahead. The great challenge for financial companies is to find their place in the new global world of electronic commerce. While some smaller and specialized firms may focus on any one of the financial verticals, the future for large-scale retail financial service providers is to offer a web-based hub that will include a complete range of products and services.

An increasing proportion of the managed savings market is expected to move online. According to a survey conducted in Germany by Forit[3], equity brokerage, current account maintenance and fund brokerage are likely to be the next popular online products.
In line with consumer's demands, it appears that mutual funds are the next asset to move online. The European mutual funds market is characterized by the dominant position banks enjoy both in terms of production and distribution. The use of Internet as a distribution channel for mutual funds varies by country. Overall, it is estimated that 1 % of sales are made online. The proportion of funds sold online is greatest in Scandinavia; Swedbank indicated that it processed 20 % of the mutual funds total order flow online in the first half of 2000. The Scandinavian mutual fund market, estimated to 173bn euro at the end of the first quarter of

2000, is dominated by the banks in the region. Eight out of the ten largest players and all of the five largest are banks. In Scandinavia, as well as in other European markets, it is expected that the proportion of funds sold online will increase. This is because the medium is a very good one for analysing fund performance and subsequently selecting funds, and the transaction is relatively easy to execute. In the US, the Internet is already making significant inroads in mutual fund distribution; 9 % of the US mutual-fund-owning households conducted a mutual fund transaction via the Internet in the 12 months to March 2000. As opposed to the European distribution model, fee-based intermediaries and fund supermarkets, both of which are pure mediators, are breaking up the value chain in the US mutual funds market. The bulk of US Internet mutual fund distribution goes through such intermediaries rather than directly through the provider's website; 36 percent of mutual fund share holders who conducted a transaction via the Internet in 2000 own funds through an online-only broker. This is also expected to be the case in Europe, as fund supermarkets are beginning to emerge.

The financial services in the future must be an integral part of the new Internet economy, which calls for the swift creation of value added services. This means heavy emphasis on the development of expertise and new technology. Customer relations will also become more important in a world where global competition challenges customer loyalties in every dimension. Multiplicity is becoming more important than imitation, differentiation is becoming more important than size, and strong branding and reputation is becoming important competitive parameters.

4.1.5 Structural Changes

The structure of financial services will change in the future, and the industry's structural contour will be erased as a result of establishment of competitive bridges to different services and industries. The financial services industry is moving towards simpler and more decentralized structures, provided that one is able to make use of the new information and communication technology. It is unlikely that the major traditional banks will be at the forefront of the technological development. The challenge will rather be whether the financial companies are able to acquire the new skills that the Internet economy represents. Perhaps will we be witnessing mergers between banks and innovative Internet companies. A new

[3] Credit Suisse First Boston [Europe] LTD., 2000: *Asset gathering in the new economy*.

trend that might appear is a shift in industry demarcations through the arrival and involvement of aggressive players from telecommunications and IT-sectors in the financial services industry.

The industry is characterized by an inclination towards increased horizontal integration over a broad spectrum of financial services, which results in the formation of large financial enterprises. This is mainly caused by the opportunities for realization of economies of scope through joint production of services within the same business economic entity, strengthened by consumers desire to buy certain financial services like bundled products in order to save transaction costs. Related to this horizontal integration, vertical disintegration processes in the distribution chain due to new intermediaries are taking place as well. The horizontal integration capabilities of these intermediaries may lead to increased concentration in the financial markets.

On the other hand, there are tendencies towards diversification of the available product spectrum, beyond the financial services, and establishment of conglomerates[4]. The driving force behind this trend is the convergence of different markets as a consequence of a common technological platform or infrastructure to offer products, caused by technological development. Typically, this infrastructure consists of different physical networks that are connected; like computer networks, telecommunication networks, broadcasting networks, electricity networks, etc. This implies that corporations connected to such networks have the opportunity to offer all kinds of products and services that can be transferred through these networks. Thus, the biggest challenge for the "traditional" financial corporations is to cope with the competition from new none-financial actors that will offer financial services, provide market positions in the new electronic financial markets, and to adapt one's strategic market- and structural thinking to conglomerate formations.

[4] An example that may illustrate this is that Den norske Bank offers financial services through the branches of Norway Post.

4.2 Value Chain Description

The objective of this stage is to provide a detailed description of the value chain structure in the financial services industry. More specifically, the description will mainly focus on the distribution channel in mutual funds' value chain. Each link of the chain will be discussed in brief, thus making it possible to gain insight in the different value chain components and the relations pertaining to each part.

4.2.1 Mutual Funds Value Chain

In the European financial services industry, the current business model depends on a vertically integrated value chain through which multiple products are originated, packaged, sold, and cross-sold through proprietary distribution channels. The distribution model for mutual fund in Europe is characterized by proprietary sales forces, which account for the majority of funds sales.

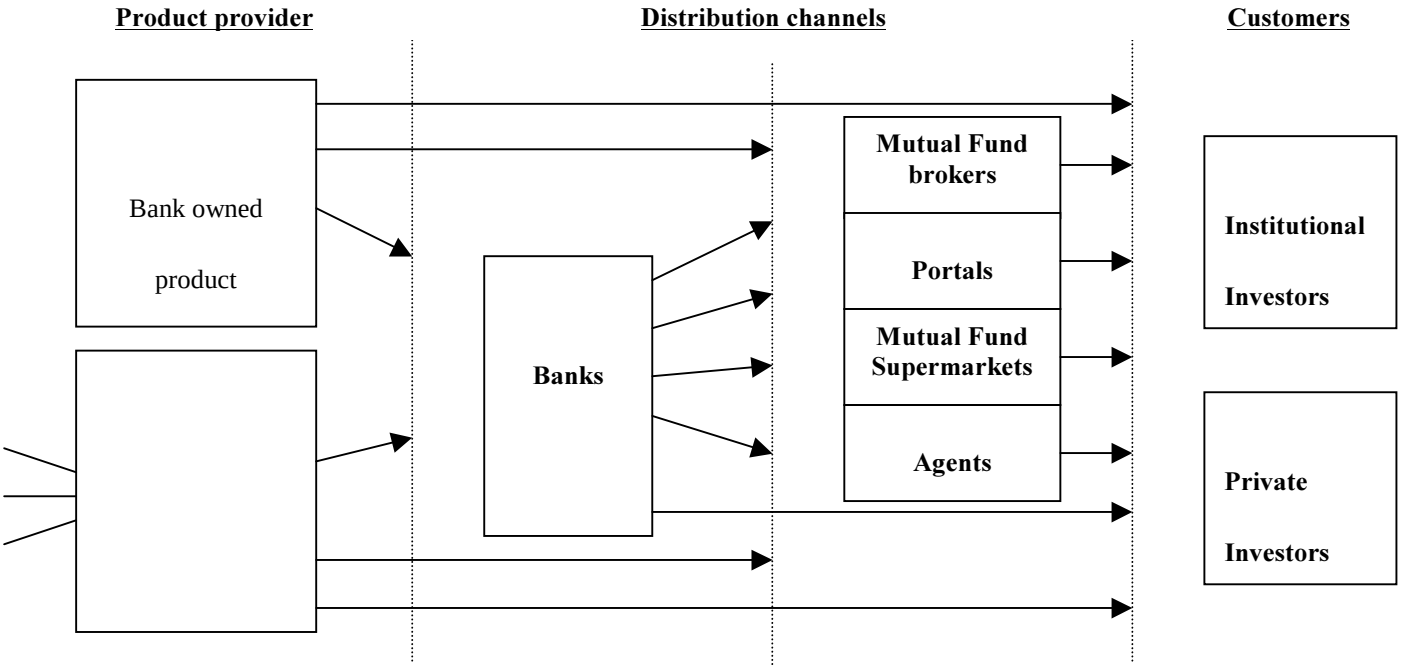

Figure 4: Mutual funds value chain.

Mutual Fund Providers

The European mutual funds market is characterized by the dominant position banks enjoy both in terms of production and distribution. On the production side of the industry, banks have a share in excess of 90 % in most key markets outside the UK (Source: Credit Suisse First Boston, 2000).

Distribution Channels

In Scandinavia, the bank branches have been the dominant intermediaries in the mutual fund market. The banks have shares ranging from 53 percent to 96 percent of mutual fund distribution in Europe[5].

Traditionally, financial services products have been sold or distributed through 1) companies' own agents, which are agents of financial services companies, or the branches of a bank for bank-owned products. (These can range from traditional banking products, such as deposits, loans, and payments, to other financial services products, such as life insurance, pensions, and mutual funds.) 2) Independent agents, which are the independent financial advisers in the UK, broker/dealers in the US, or the growing group of brokers in Continental Europe. They also include banks that sell on behalf of third-party insurance companies, mutual fund groups or other financial services companies. 3) Direct sales, where the financial services product is purchased directly from the provider at the behest of the customer.

In a web environment, the technology should soon exist to compare the products of all similar financial services products, and be able to affect the sale of these products. The need to have a financial services affiliation starts to become less compelling in this environment, thus the use of independent agents may increase. However, the banks' response to the challenge related to the emergence of the Internet as a distribution channel, has been to make sure that their own Internet distribution is up to the standards of their competitors. Despite some analysts' argument that banks are not cut out to be financial portals, many are developing their sites with the vision of becoming more than a dead end for account management and transactions. Further, in a web environment, many financial services companies are already endeavoring to build up their direct sales functions. Similar to the old economy, the products are purchased

[5] Source: Credit Suisse First Boston, 2000.

directly from the financial services provider at the behest of the customer. The increased sophistication on the part of the customer is shifting the emphasis away from distribution in favor of product characteristics such as performance. The banks response to this challenge has been to open up their distribution networks, either partly or fully to the products of third-party providers.

With thousands of mutual funds for sale, most investors need some help separating the prime funds from the rest of the herd. The broker has the ability to provide information and access to a wide range of mutual funds. Just as important as providing advice is the online broker's ability to provide a consolidated mutual fund center, since the average investor owns funds from several different mutual fund companies. In this instance, the Internet does add value, by creating a readily accessible one-stop destination for mutual funds. In the US, where this Internet already is making significant inroads in mutual fund distribution, the bulk of this distribution goes through such intermediary mutual fund supermarkets rather than directly through the provider's web site. (36 % of mutual fund shareholders who conducted a transaction via the Internet in 2000 own funds through an online-only broker.)

Most financial portals features tools like portfolio tracking, emailed news, price target alerts, and some variety of wholesaled news and/or original content. Most of the value add in the portals are the portfolio analytical services and topical articles. Most are advertising supported models with some ability to pay a subscription, essentially wholesaling other feeds.

4.2.2 Potential Reconfigurations in the Financial Services Industry

The use of the Internet as a distribution channel for mutual funds varies by country. Overall, Credit Suisse First Boston (2000) estimates that 1 % of sales are made online, and expects this share to increase. In the new world, distribution can be done by the phone company, statements by financial management software, facilitation by different kinds of agent software, and origination by any number of different kinds of product specialists. The integrated value chain of retail banking will thus have been deconstructed. However, banks would not become obsolete, but their current business definition would change – specifically, the concept that a bank is a vertically integrated business where products are originated, packaged, sold, and cross-sold through proprietary distribution channels.

Because of the Internet, customers can access information and make transactions in a variety of new ways. In today's integrated business model, the retail bank stands between the customer and the full range of financial services. But through Internet technologies, customers will have direct access to product providers. As choices proliferate, totally new businesses will arise to help customers navigate through the expanded range of banking options (e.g. mutual fund supermarkets). Thus, some companies will have an incentive to create (or simply make available) databases on interest rates, risk ratings, and service histories.

4.3 Case Study Presentation: Den norske Bank

4.3.1 Background Information

The DnB Group is, with its 7052 employees (full time positions at the end of year 2000), 2,1 million retail customers and 104000 business customers, the largest institution in the Norwegian financial services industry and the main bank connection for the major part of the 300 largest businesses in Norway. DnB has a total group asset of NOK 452bn (US$49bn), and it is the 3rd largest market cap on Oslo Stock Exchange (Oslo Børs). Presently, the government owns 60,64 percent of DnB.

In 2000, DnB made an annual profit of NOK 4018 million, which was an increase of 29 per cent related to the profit for 1999 (NOK 3125 million[6]). The net interest income for 2000 amounted to NOK 7221 million, which was an increase of NOK 140 million compared to the 1999 numbers. The pre-tax operating profit before losses was NOK 5012 million in 2000, and NOK 3608 million in 1999, while the pre-tax operating profit for 2000 amounted to NOK 5248 million, compared to NOK 3636 million in 1999.

Company Structure

DnB Holding is the stock exchange listed parent company of the group of companies that form the DnB Group. Den norske Bank ASA (which will be in focus in this study), Vital Forsikring ASA, DnB Kapitalforvaltning ASA, Vital Fondsforsikring ASA, and Vital Skade ASA are all associated companies in this structure (figure 3). DnB Holding is concerned with

[6] The 1999-profit was on pro forma basis for both DnB and Postbanken.

superior subjects and tasks in the concern, e.g. planning, risk governance, and questions regarding capital structure.

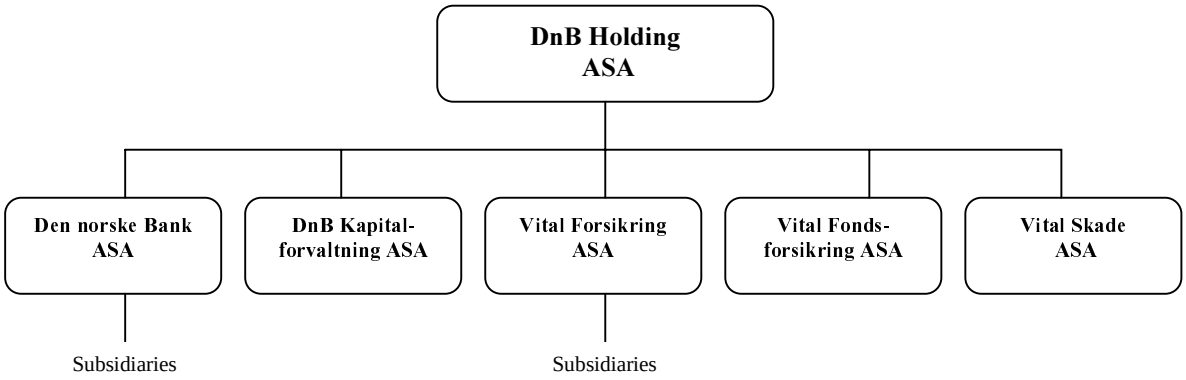

Figure 5: Structure of the DnB Group.

DnB Holding ASA is the total owner of Den norske Bank ASA, which again has a number of subsidiaries (figure 4). The most important operative companies owned by DnB ASA include: DnB Finans, DnB Factoring AS, DnB Kort AS, DnB Investor AS, and DnB Eiendomsmekling AS.

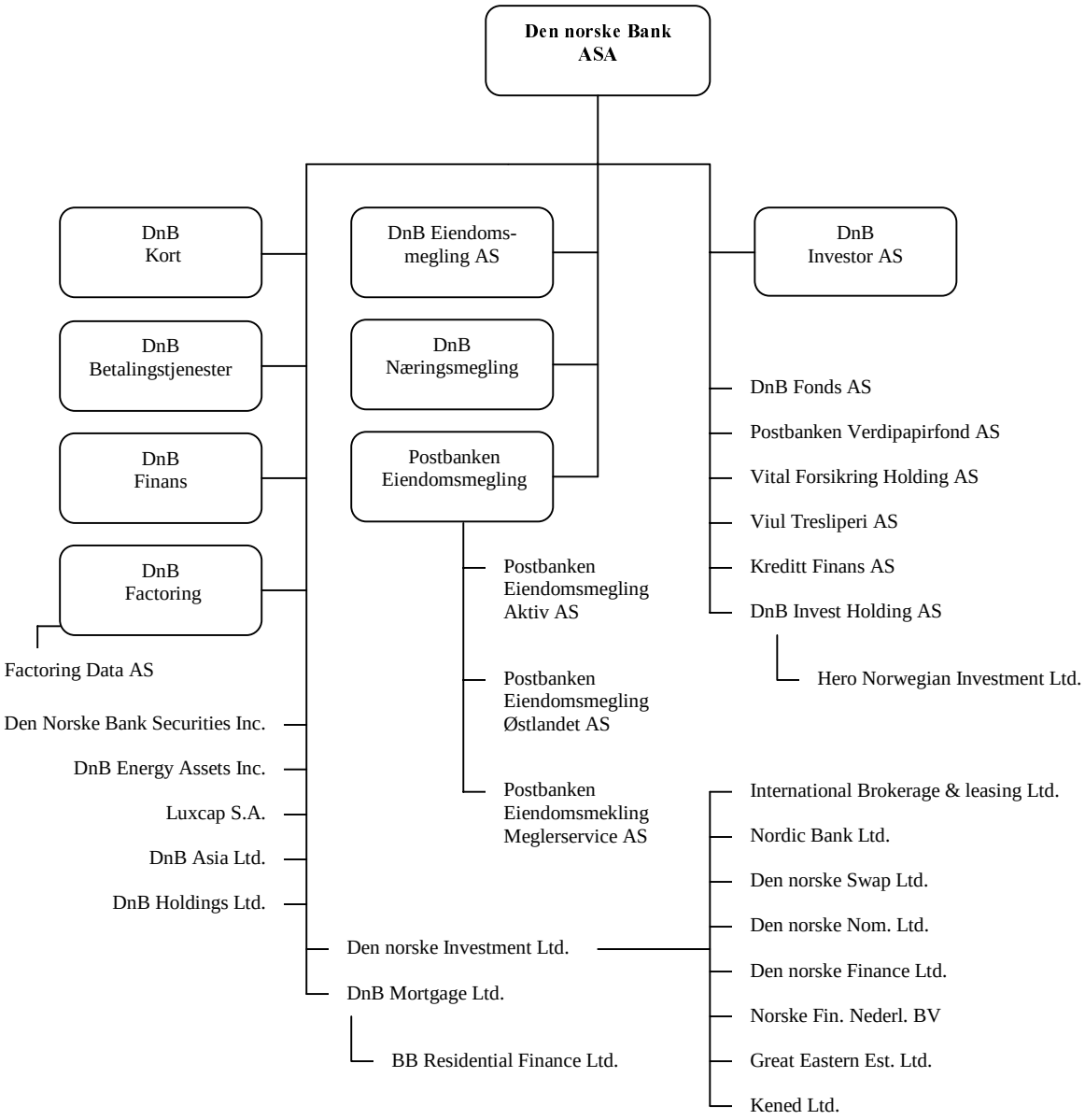

Figure 6: Subsidiaries of Den norske Bank ASA.

In May 2000, DnB reorganized its operations and certain responsibilities to achieve greater proximity to customers and further strengthen DnB e-banking operations. Changes included consolidating corporate market activities, including shipping clients, large corporate customers as well as small and medium-sized corporate customers, into one business area, while another business area is responsible for serving DnB's and Postbanken's private customers. In addition, a separate business area is now responsible for e-development.

The DnB Group's operations comprise six business areas, two of which serve various customer segments, while four are responsible for the development and marketing of specialized financial products across customer segments. Key customer segments are *retail customers*, including the smallest businesses, and *corporate customers*, serving small and medium-sized companies as well as large Norwegian corporations, shipping companies and international corporate customers. Specialized product areas are *capital markets* and *asset management.* The third and fourth product areas handle payment transfers and trade finance services together with other specialized products such as plastic cards, leasing and factoring services, as well as e-development.

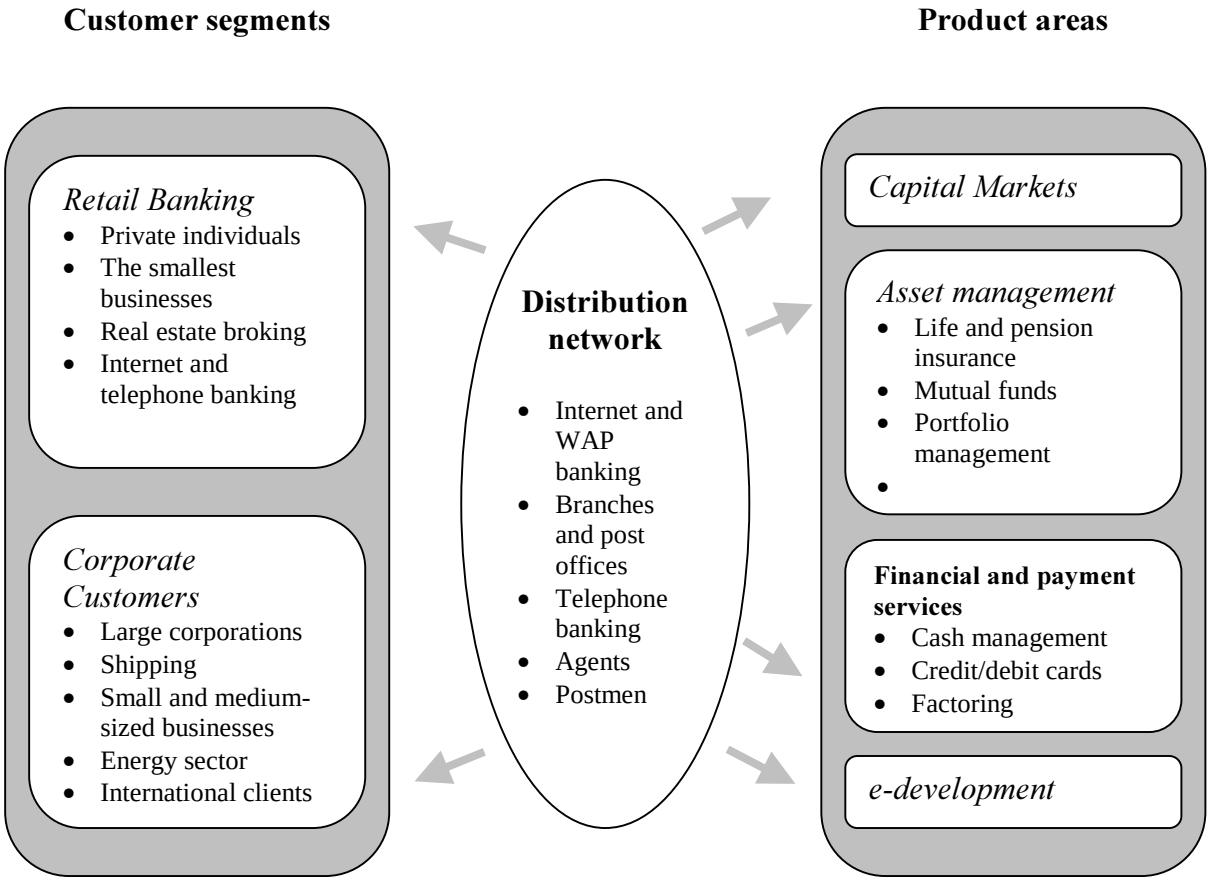

Figure 7: Customer segments – product areas.

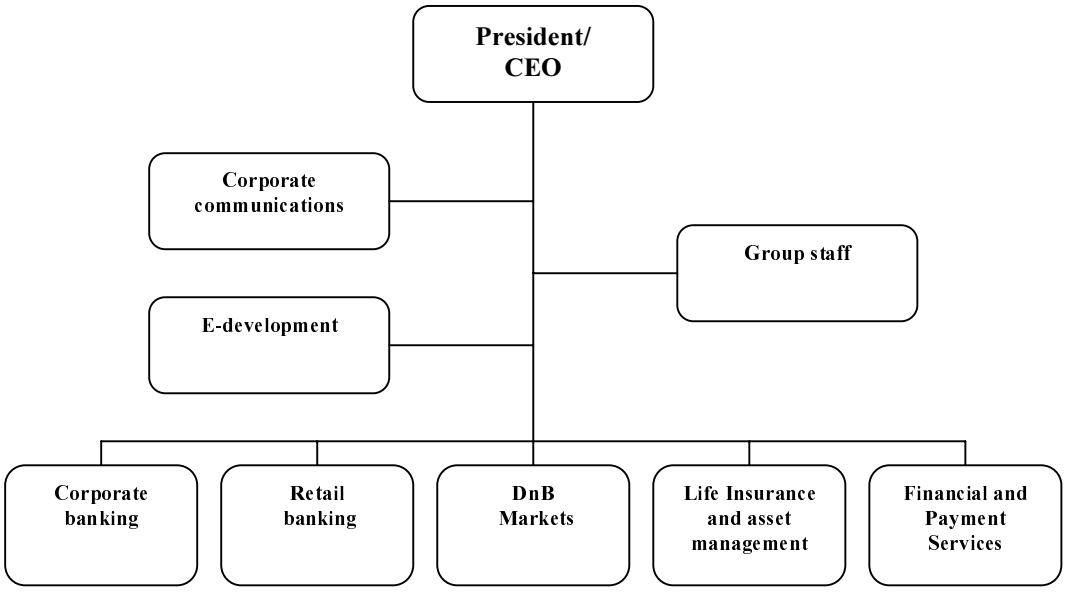

Figure 8: DnB Group – organization chart.

Distribution Network

The 1st of December 1999, DnB and Postbanken merged, and became the largest financial concern in Norway with a nation-wide distribution net. Den norske Bank ASA and Norway Post have a master agreement relating to the distribution of financial services through the postal network, which is effective until 31 of December, 2005. This agreement is an extension of the former agreement between Norway Post and Postbanken, and is based on transaction-specific prices and a joint aim to increase the number of financial services distributed through the postal network. Today, the concern's distribution channel consists of:

- 125 domestic DnB branches, of which 51 fully automated and 10 regional centers
- Six international branches
- Four international representative offices
- 19 Postbanken branches
- 19 Postbanken sales outlets
- Internet banking
- Electronic banking
- Telephone banking

- WAP banking
- Online equities trading
- 881 post office counters *
- 361 post office in-store outlets *
- 2400 rural postmen *
- 55 Postbanken Eiendomsmegling sales offices (franchises)
- 40 DnB Eiendomsmegling sales offices (all located in DnB branches)
- 20 Vital sales offices
- 29 Vital agent agreements

- Provided by Norwegian Post (the Norwegian postal system)

Further, the merging also resulted in a considerable increase in the number of customers that use the bank's Internet solution.

Strategic Focus

The DnB Group's strategy is to manage and further enhance the substantial customer base and distribution capacity in Norway. By offering the best financial products and services, DnB wants to be the preferred partner within the financial sector for Norwegian companies and households. DnB gives priority to meeting the specific needs of the various customers through a full range of competitive products.

DnB is dedicated to delivering shareholder value through the optimum use of its unique customer franchise. No other financial institution in Norway has a corresponding interface with its customers. In addition, the Group's Internet services, through Dnb.no and Postbanken.no, show fast growth. This unique customer franchise will be the focus of DnB's strategy by ensuring that the most value for the shareholders is extracted from the best distribution network and the best solutions at the lowest costs.

Strategic Direction – Gateway to the Best Products

DnB is committed to providing its customers with access to the best financial products in the market. When those products are not available from within the DnB Group of companies, DnB will seek solutions from external suppliers. This could be of particular relevance for product areas where it is impossible to obtain critical mass in the Norwegian market. In such areas, DnB will therefore try to find international partners to secure competitive solutions for the most demanding customers.

DnB will create an operating environment based on appropriate management reporting systems, remuneration packages and ambitious financial targets, which will enable the Group to select and deliver the right products. DnB Group product areas will have to make sure that their products are not only able to compete with products from external suppliers in terms of performance and suitability, but also in terms of costs. This will create a competitive environment within the DnB Group, which is expected to deliver the best products at the lowest possible price.

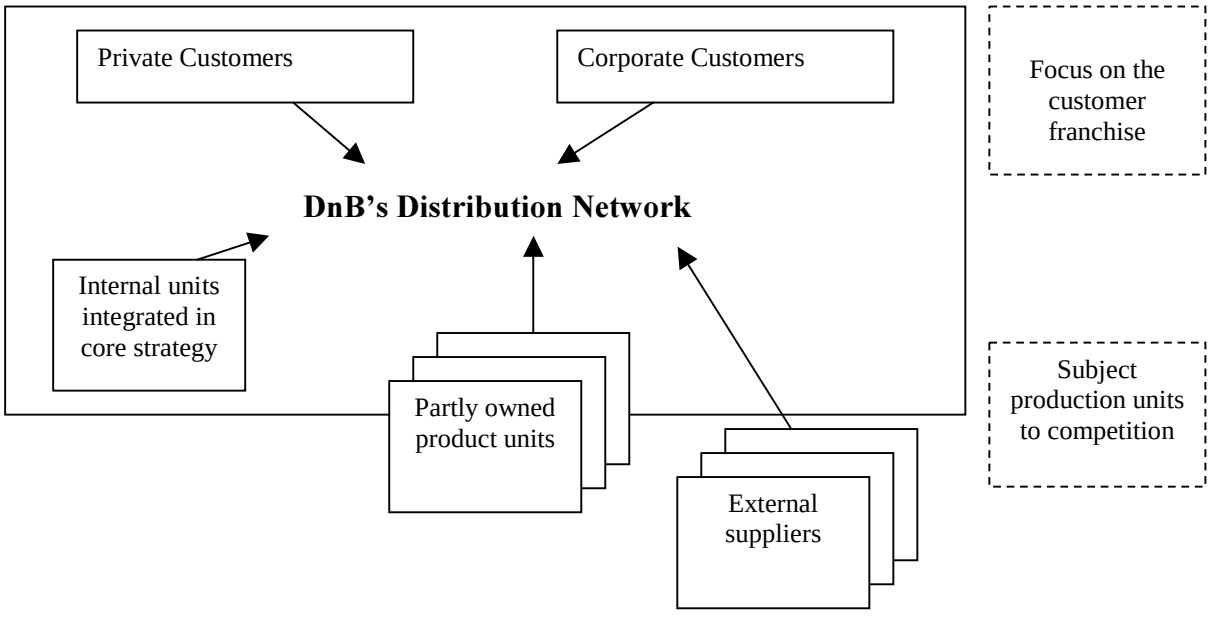

Figure 9: DnB Product Strategy: DnB will give the customers the best products, either from external suppliers or from units within the DnB Group. By doing this, the internal units will have to make sure that their products are able to compete with products from external suppliers in terms of performance, suitability, and costs.

Strategic Direction – Gateway to Norway

By having a unique distribution system, DnB hopes that international companies that need financial products and services in Norway will choose DnB as their business partner. For the same reason, DnB also aims at being the most preferred institution for foreign financial companies when it comes to forming strategic alliances.

Strategic Direction – Niche Products

Norway has high personal computer, mobile phone and Internet penetration. Educational standards are above the European average. DnB will seek to maximize this combination to develop technology relating to financial services which could, in certain selected areas, be offered in markets outside Norway. Such areas could be Internet-based or require special professional skills, e.g. to support the development and operation of national payment services. Following the merger with Postbanken, DnB is Norway's largest payment services organization and expertise in this area could be attractive to countries in the process of developing their national payment systems. Additional expertise that could have an application in markets outside of Norway would include the shopping and offshore sectors.

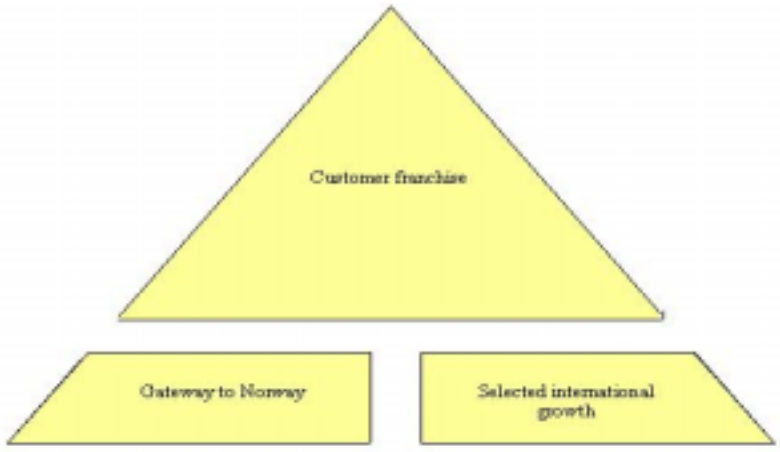

Figure 10: DnB Strategy: - Focus on the interface towards customers [customer franchise].
- Focus on providing international companies with a unique distribution system [gateway to Norway]
- Focus on specialized products that can be offered in foreign markets [selected international growth].

4.3.2 Markets and Structure

It is common to make a distinction between *active* and *passive* procurement of mutual funds[7]. The distinction between these to types refers to the roles that the agents possess. A passive agent does only provide the customer with information about the different financial products and suppliers, and the customer has to complete the transaction itself. In contrast, an active agent does carry through the transactions for the customer. To this point, we have not experienced any radical changes in the market for active funds procurement. Although the Internet is expected to have implications regarding actors' roles and the composition of the distribution channel of this procurement type, it is still large banks and insurance companies that play the dominant roles. However, in the market for passive funds procurement, new actors are taking a more visible position (e.g. Fondsnett.no), and the use of Internet as channel for transaction will probably lead to an exponential development of this procurement type. The reason for this assumption is that passive mutual fund procurement does not involve tight relations with the customers, thus the Internet is more suitable as a distribution channel for this procurement type.

Another aspect that is likely to influence the future market structure in the mutual funds business is the modification of the statutory framework in the financial services industry. According to DnB, upcoming changes in legislation will lead to increased opportunities for implementing differentiation strategies on price. It will be possible to differentiate at the customer-level, rather than product-, and this will in turn make it easier for new actors to enter the funds market. DnB Investor will respond to this development by initiating brokerage boards for small and medium-sized enterprises.

As shown in figure 9, there are four upstream actors of high importance to Den norske Bank ASA[8]. These actors manage two different "types" of products; funds that are self-generated and funds that are bought from external product providers (third-part products).

[7] Typically, the roles of agents are organized in accordance with this dichotomy. In Norway, Acta [www.acta.no] may serve as an example of an agent that focuses on active procurement of mutual funds, while Fondsnett [www.fondsnett.no] is an example of a passive intermediary in the mutual funds distribution channel.
[8] Distribution of mutual funds from these providers is not dependent of DnB bank as an intermediary; these four actors provide direct sale to customers.

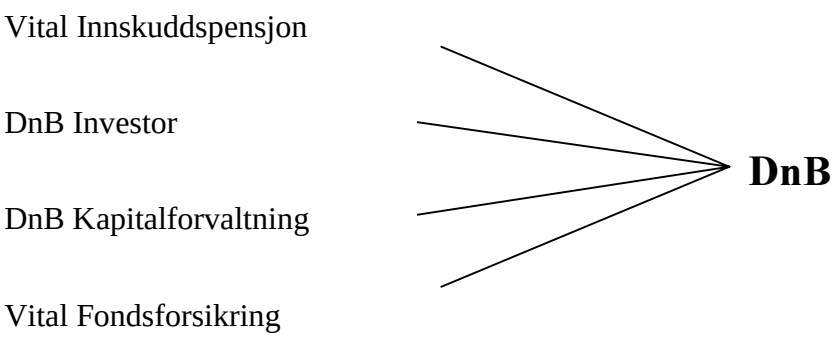

Figure 11: DnB's up-stream contacts regarding mutual funds products

DnB Investor AS is the DnB Group's mutual funds company and is required by law to manage assets in mutual funds separately. It is the second largest fund management company in Norway with a market share of 20,7 percent as at 31 December 2000. It has nearly 435 000 client relationships including 165 000 savings agreements (for clients making savings every month). Further, DnB Investor has approximately 5000 business customers.

DnB Investor AS manages funds under both the Postbanken and DnB brand names. The company's staff comprises around 80 full-time positions. Responsibilities include providing sales support and advisory services with respect to funds sold through Den norske Bank branches and the Postbanken network. Assets under management amounted to approximately NOK 29,5 billion at year-end 2000, a growth of 17 percent since 1999. Asset management fee income for DnB Investor in 2000 was NOK 465,4 million, compared with NOK 239,8 million for 1999, an increase of 94,1 percent. Management fees are calculated on the funds on a continuing basis (fees range from 35 to 200 basis points depending on the type of fund). Sales commissions depend on the amount invested (up-front fees from 70 to 500 basis points depending on type of fund and client) and the amount accruing to the fund varies from 0 to 50 basis points. Commissions upon redemption are directly accrued to the various funds and vary from 0 to 100 basis points.

DnB Investor's product range represents internally managed funds as well as funds based on sub advisory accounts fund of fund with third parties. Thus, the company uses the strategy of buying products from sub-contractors and selling under their own name. In addition, The Norwegian Postal Service sells DnB Investor's products, and thereby constitutes a part of Investors customer interface. However, the Norwegian Postal Service delivers these products as part of their own assortment.

DnB Investor manages a set of different portfolios, focusing on geographic areas as well as sector specific portfolios. It offers 13 money-market and fixed-income funds and 31 domestic and international equity and balanced funds, four of which focus on specific sectors (consumer goods, finance, health care and technology). DnB Investor cooperates with about 50 brokerage houses, but operate only in an advisory position towards customers.

DnB Kapitalforvaltning ASA is one of the leading discretionary asset managers in Norway. At year-end 2000, the company managed NOK 67,8 billion on behalf of clients, up from NOK 65,0 billion in 1999. DnB Kapitalforvaltning carries out discretionary asset management (NOK 9,5 billion) on behalf of private individuals (11 percent), corporates (14 percent), pension funds (61 percent), the public sector (6 percent), and trusts (8 percent).

Asset management incorporates the management of individually designed investment portfolios by DnB Kapitalforvaltning. Assets include global equities, bonds and derivates as well as mutual funds managed on a discretionary basis with reference to relevant indices. An important part of the service is to advice clients with respect to strategic allocation, risk levels, specific mandates and on-going monitoring of portfolios. Thus, DnB kapitalforvaltning's role is to administer mandates from their customer; they make buying decisions on behalf of customers, but only within the frames of that specific mandate. DnB Kapitalforvaltning has approximately 180–190 customers, and it is a requirement that these customers make an investment of minimum NOK 5 million. Business customers constitutes 60-70% of the total customer mass.

Vital Fondsforsikring is a subsidiary of Vital Forsikring ASA, Norway's second largest private life and pension insurance company. It is responsible for developing and offering unit linked products, and has approximately 2000 customer relations. These products are not directed towards the business market. However, products tailored to DnB's corporate customers enable Vital to benefit from the large potential in DnB's corporate customer base, which includes many companies without corporate pension plans.

Vital Innskuddspensjon is a newly initialized company that offers savings services by mutual funds investment. This company directs all attention towards the business market, and aims at capturing 100-200 customers within a 4-year period.

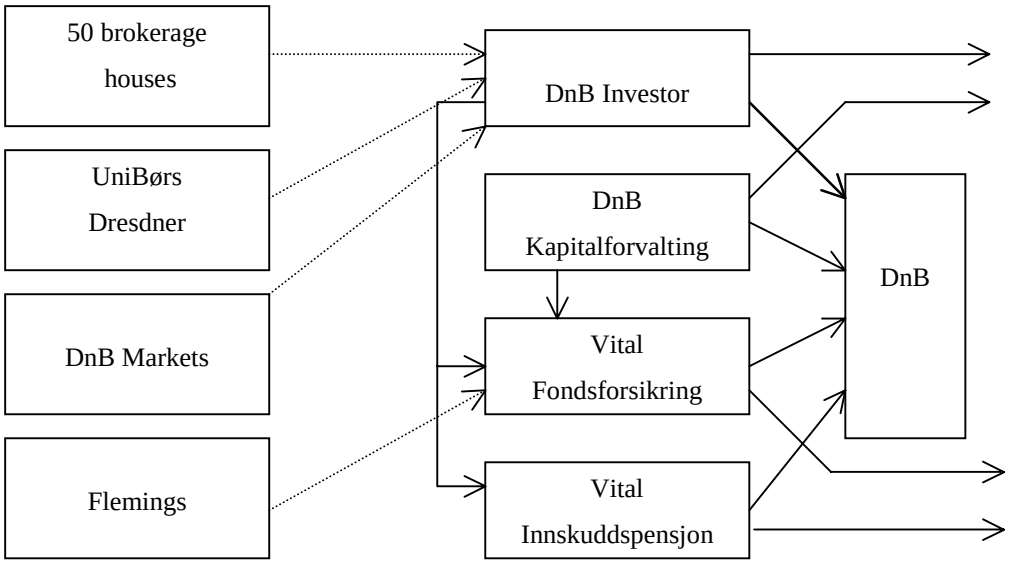

Figure 12: Mutual funds product providers relevant to the DnB Group.

There are mainly four different mediating channels operating between DnB and their end customers (figure 11); "brokerage boards", assurance companies, independent agents and dependent agents. In addition, there is a specific unit within Den norske Bank ASA that focuses solely on concern/enterprise customers.

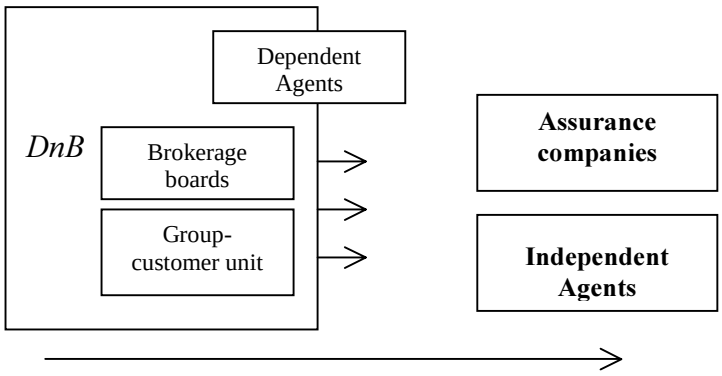

Figure 13: Mediators between DnB and the end customers.

There are 9 *brokerage boards* in Norway, which attend to their customers' interests. These "units" are an integrated part of DnB's organization, and are composed of representatives from the different subcontractors to DnB. In contrast, both *assurance companies* and *independent agents* operate independently of DnB, and use DnB's products only as a part of their assortment. That is, these mediators also buy products from other product providers. The *dependent agents*, however, are closer related to DnB than independent agents and assurance companies.

In contrast with the brokerage boards' focus on commissions, the internal unit that is engaged with enterprise customers is to a lesser extent commission-oriented. DnB has approximately 100 – 150 enterprise customers, primarily consisting of large Norwegian corporations, international customers within oil and energy, public sector and financial institutions. The strategic focus within this unit is continued emphasis on cross selling, particularly with regard to corporate finance and asset management, maintenance of satisfactory credit portfolio quality and continued reduction of international and non-strategic exposure, and making the service concept available on the Internet by providing value-enhancing services for clients.

DnB Investor accomplishes approximately 80-90% of the total mutual funds sale of the DnB Group (business customers). As mentioned earlier, the brokerage boards in DnB are composed of representatives from various subcontractors, and are dependent on the product in question. As a consequence of different compositions of brokerage boards relative to various

products, DnB Bank's role in mutual funds distribution is dependent on the product type being sold. In any case, each business customer relate to only one person from this board as their contact. This reflects DnB's focus on customers rather than product, where a lot of effort is invested in building one-to-one customer relations.

There is an obvious disparity in the importance of different sales channels for these four main product suppliers. In the case of *DnB Investor*, 75-80 per cent of the transactions are handled through brokerage boards, while agents handle the remaining 20-25 per cent. DnB Investor has grown from offering 25 different mutual fund products to 42 in just one year. However, the assortment volume has to increase in order to be competitive, and DnB Investor believe that a sufficient increase in the product range can only be accomplished by engaging in relationships with other product providers. In other words, they will try to increase their market shares by using the competence of external and specialized suppliers.

DnB Kapitalforvaltning outsource all customer contact to brokerage boards, while approximately 75 per cent of *Vital Fondsforsikring*'s distribution of mutual funds are mediated by independent agents and 25 per cent are sold through dependent agents. *Vital Innskuddspensjon* will use both dependent and independent agents, and the company anticipates that their products will compete in a market worth about NOK 10 billion within a three years period.

4.3.3 Technology

The DnB Group Internet bank was introduced in April 1998, and by the end of October 2000, 232 546 Internet banking clients have signed up. Trading in mutual funds started in June 1999. Equities trading commenced in October 1999 at Dnb.no/aksje, offering a complete trading system for Norwegian shares and primary capital certificates. The clients may choose between payable real-time or free, 15 minutes delayed information on Norwegian stock prices, main market indices and updated stock market news. The system also provides direct access to the clients' gains or losses on the shares in their account. Approximately 25 per cent of DnB Markets' total number of transactions is made online, representing approximately 6-7 percent of the total volume. About 10 000 clients had signed up as at 30 September 2000, and the average transaction value is approximately NOK 51 000 per client.

DnB was the first bank in Norway, and among the first in the world, to introduce WAP banking (November 1999). This service is available to DnB retail customers and Postbanken's customers, and includes access to account statements as well as payment services. The service is accessible through ordinary GSM phones as SMS messages or through WAP phones.

Communication with customers is to a certain extent done through their web sites. Customers are able to monitor their share holdings, and they are also offered an advisory calculator; a tool which makes it possible to see how different investment options influence interest, and thereby predicting future profit.

The marketing of DnB's four product providers (DnB Investor, DnB Kapitalforvaltning, Vital Fondsforsikring, and Vital Innskuddspensjon) is done through brokerage boards, using direct dialog with customers. Communication between brokerage boards and their customers is to a certain extent carried out by e-mail. However, there is no strategy behind this use.

The development of Internet as a strategic tool for marketing- and communication is differently emphasized throughout the DnB Group. The rate of traffic on DnB's web sites is high, but there is no functionality that supports mutual funds transactions. Their web pages are only used as a channel of information, while the transactions are carried out in traditional ways. One of DnB's main objectives is to increase their customers' competence of mutual fund products, and as a consequence, DnB's marketing efforts is to a large extent focused on already established customer relations, thus resulting in a quite static and non-growing customer mass. Another problem is that mutual funds (from the four product providers) can be purchased through channels that are external to DnB, while the opposite is not possible. That is, the DnB customers don't have the opportunity to buy none-DnB products through a DnB sales interface. When transactions are carried out, DnB debit customer-accounts. However, there is no direct link to the customers' underlying accounting systems, thus the customers have to balance these systems on their own.

DnB Investor on the other hand, has a considerable more aggressive strategy in this area. This has lead to an increasing bypass of DnB as an intermediary in the distribution channel. Thus, DnB is forced to compete on equal terms with other intermediaries, creating an internal market situation.

Customers are informed of developments and trends in the mutual funds market through morning reports, issued by DnB centrally. These are based daily analysis, and are delivered via an e-mail service. In addition, monthly reports are also available. However, as opposed to the morning reports, the monthly reports are sent directly from DnB Investor by use of e-mail or traditional mailing services.

Vital Fondsforsikring (and to a certain extent Vital Innskuddspensjon) are dealing with products that are more applicable to Internet distribution than many other financial products. Further, their customers are above average regarding knowledge of the involved products, and it is easier and potentially more successful to conduct training and educational schemes with these customer groups. Thus, Vital Fondsforsikring and Vital Innskuddspensjon perceive web-based transactions as a distribution form for the future. Their web-solutions will be launched quite soon.

DnB has appreciated establishing an advisory/consultative full service Internet portal service (equivalent to Fondsnett.no), which where supposed to offer all kinds of funds products. However, DnB believe that there is only room for one such service in the Norwegian funds market. Fondsnett was at the time, and still are, well established in this market, and DnB where not willing to expose their products to this competition.

DnB's investment cost for information technology infrastructure amounted to NOK 271 million in 2000.

4.3.4 Electronic Commerce Initiatives

Netaxept

On 30 June 2000, DnB established a 50/50 joint venture with Norway Post. The new company, which is called Netaxept, will provide a secure payment system combined with a delivery system for goods purchased online. The company plans to launch a pilot project together with an Internet shop.

Doorstep

In July 2000, DnB established a 50/50 joint venture with Telenor (the leading Norwegian telecommunications company). The new company aims to be the leading Internet shopping portal in Norway. In the first release the company will focus on distribution of online and mobile financial services. Some telecommunications and existing m-commerce services will also be distributed through the portal.

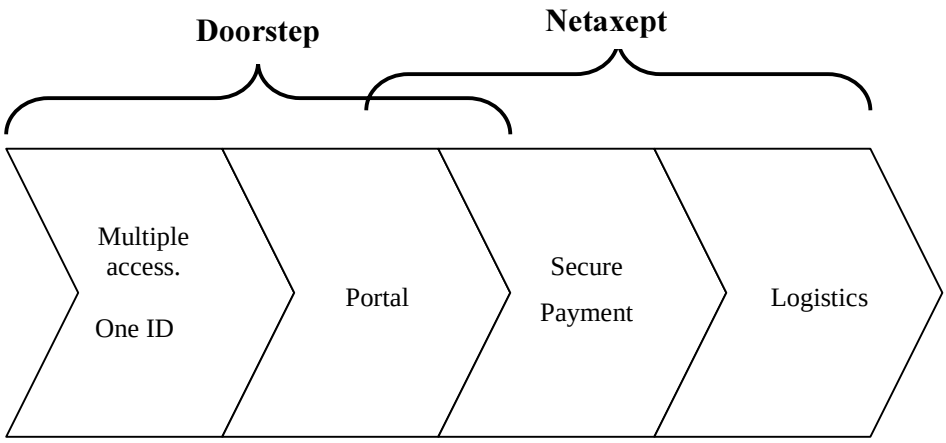

Figure 14: Value chain and e-convergence[9]

Joint Venture with Accenture, Norway Post SDS and Telenor

On 30 October 2000 DnB, Andersen Consulting (now Accenture), Norway Post SDS and Telenor announced the signing of a letter of intent for a new joint venture, which aims to become the leading operator for electronic commerce to the Norwegian and Scandinavian corporate markets [B2B]. The joint venture will establish an electronic marketplace for the public sector.

[9] Doorstep will be the entrance to what will become a new virtual "city" with its own secure shopping facilities, bank, and a post office. At Doorstep, all purchases will be paid for at the same check out point, which increases the safety as well as it is convenient and practical. Further, it will be a multi-channel shopping center, where the "shopping mall" can be accessed via PCs, mobile phones through SMS, PDA through UMTS, or a mobile WAP telephone. This online shop requires secure and flexible payment and delivery systems, and this is provided for by Netaxept, which will be an integrator for settlement and deliveries.

Teleinsurance

Through Teleinsurance, Vital has opened up for interactive communication with insurance customers via the Internet. The service gives corporate customers (and their staff to come) updated information on their pension schemes and is used by a total of 320 companies with nearly 50 000 employees. Vital will also launch an Internet-based pension advisory service in 2001. The service will be interactive and offer customers advice on pension savings based on the customer's preferred savings and pension profile.

Telefactor

Telefactor is a web-based information system enabling DnB Factoring[10] clients to access all relevant information relating to their status of their factored receivables. The system provides information on both a portfolio basis and a more detailed level. The product was introduced in the summer of 1999 and by the end of September 2000 more than 70 percent of DnB Factoring's customers are regular users of the system.

4.4 Interview Response

4.4.1 Motivation

The DnB Group appreciates the strategic opportunities and competitive advantages that are related to the use of Internet as a sales- and marketing channel. Through brokerage boards, DnB is already today focusing on one-to-one marketing. Operating in the mutual funds market, where the complexity of products and services is extensive, one-on-one advisory- and communicational skills becomes more and more important. DnB sees the Internet and customized web-applications as the future in taking their strategy of direct marketing a step further.

[10] DnB Factoring, a subsidiary of Den norske Bank ASA, is the second largest provider of factoring services to the corporate market in Norway with gross a lending and receivables of NOK 457 million and a share of factoring turnover in Norway of around 23 percent in 1999. DnB Factoring also focuses on providing cross-border factoring services and offers Norwegian exporters risk hedging and local collection of receivables through correspondents in most industrialized countries.

In many countries, *Index Management* has become a popular way of investing in mutual funds. The way Index Management works, is that funds managers seek to minimize the divergence between their investment products and the public day-to-day funds index. The complexity of this product is much lower, thus easier for the customers to manage by them selves. As a consequence, the advisory element that DnB focuses on will to a large degree vanish as a strategic advantage. New and less complex products will, according to DnB, increase the rates of transactions over the Internet; enabling customers to manage their own investments.

Vital Innskuddspensjon and Vital Fondsforsikring see customers' opportunities for replacing or changing their funds investments online as a more important feature than first-time buying. Due to the very low costs of using the Internet to manage such replacements, it could also lead to an increased transaction rate.

The price setting mechanisms make it possible for Internet to become an important strategic tool regarding mutual funds exchange services. Today, prices of different funds are set once a day. If this price setting process is executed more frequently, the whole process of buying funds could change. In addition, the Internet will become a more dominant factor when mutual funds suppliers get larger margins in their pricing strategies. That is, a more differentiated price scale is likely to result in increasing importance of the Internet as part of a distribution channel. The brokerage boards are to a certain degree trying to achieve customer segmentation. The Internet has the ability to support such differentiation-, customization- and segmentation strategies in a very efficient way. Still, the brokerage boards' follow-up strategies vary from customer to customer, and will not be affected by the Internet as a communication tool. Further, DnB also believes that different bundling strategies will not be affected by increasing use of online services. Each product composition is unique, and according to DnB, the Internet does not make this bundling process any easier or more efficient.

DnB does not believe that Internet will give any additional value to mutual fund products. In other words, they don't see this technology as a tool for creating competitive advantage, but rather as a necessity for being able to compete on equal terms as other financial services providers. Hence, if DnB doesn't invest in development of Internet technologies and make it

possible for customers to carry out online transactions, it may represent a competitive disadvantage.

As for the dynamics of value chain environment, the Internet gives rise and support to any actors that are willing to enter the mutual funds market. If a strong actor representing the supply side enters into the market (like Fondsnett), DnB believes this will lead to a decrease in loyalty towards suppliers. This could in turn result in a possibility for new actors to gain foothold in the mutual funds market.

4.4.2 Obstacles and Advantages

Regulating factors

Better user interfaces, which reduce customer-made mistakes, are perceived as an important factor for reducing costs related to use of information technologies. Another aspect of such technological features is network reliability. Today, the brokerage houses have the economic responsibility for any failed or unsuccessful transactions. However, when customers carry through these transactions on their own, they will also have to accept any economic responsibility if transactions are failing or turn out to be unsuccessful. On this basis, the threshold for conducting online transactions may increase. Thus, if network stability and reliability are inadequate, the customers will not make use of the technological opportunities provided by the financial institutions, and investments in technological solutions that are made could be lost.

Internal factors

When DnB started to focus on web-applications and Internet technology, the company wanted to develop its strategy and technological solutions in-house. As a consequence, the progress has been slow, and DnB are one or two steps behind the leading actors in this area. However, because of a very positive attitude regarding development of innovative Internet strategies among their company executives, DnB feel that it is possible to can catch up with the market leaders on web-based funds transactions.

Strategic factors

Those actors that start offering index management will be able to reduce their sales-costs because of less complex and highly standardized products. Such products give customers a better view of the available alternatives, thus making lock-in mechanisms less effective strategic tools. Well-developed advisory services could make up for this loss of strategic options, and lead to more loyal customers.

Public factors

There are many obstacles associated with various intermediary roles in the mutual funds distribution channel (e.g. Fondsnett). A modification of legislation is in progress, which will remove most of the entry barriers that limit newcomers' possibilities in getting foothold in the mutual funds market today. Other changes will also be carried out within the relevant legal framework: Changes that are made render possible products like "Innskuddspensjon"; a product that, in order to be successful, has to be supported by Internet technology. There will also be changes within the legal frameworks that regulate how price setting is carried out. This will make it easier to differentiate on price, and can then be done at customer-level, in contrast to today's product differentiation. According to DnB Investor, such changes will also make it easier to offer "funds-in-fund" products.

In order to restrain whitewashing of money, starting up as a customer in the funds market means fulfilling requirements in the law, which is very strict in Norway (i.e. new customers have to legitimate themselves). By adjusting conditions for the application of "digital signatures", these requirements of the law can be eased up.

5. Sector Report: The Norwegian Travel Industry

5.1 Introduction

The travel industry is one of the largest and most expanding industries in the world. This is mainly caused by an increase in the interaction between different countries, and the development of commerce and investments across frontiers. The fact that we experience a larger degree of social and cultural bonding between people in different nations, a considerable increase in prosperity, and a growing financial freedom around the world, contribute to the development of the travel industry as well.

The travelers demand composite products, which are usually made up of various products and services from different enterprises. The components that constitute the total products are, among other things, determined by the purpose of the journey and other requests and desires that travelers may have. Food and beverages, overnight accommodation and transport, are some of the obvious ingredients that constitute a journey.
The travel industry is not a plain concept in an economic and commercial context. It is rather used as a generic term that describes those industries where considerable parts of the production are intended for travelers. It includes:

- Overnight accommodation: Hotel, camping, etc.
- Service: Restaurant, bar, canteen and catering.
- Transport: Buss, taxi, metro, airplane, domestic and international ferries, cruise.
- Arrangement: Travel agency, tour operator, car rental agency.
- Adventure: Amusement park, circus, sports, entertainment, leisure activities, etc.

Worldwide, $3.6 trillion was spent on travel in 1996. By 2006, the WTTC (World Travel and Tourism Council) estimates that expenditure on travel will have risen to $7.1 trillion, nearly doubling within 10 years. In 1999, travel and tourism generated, directly and indirectly, across the global economy: 11% of GDP, 200 million jobs, and 8% of total employment. Further, WTTC expects 5.5 million new jobs per year until 2010.

In Norway, estimates indicate that the travel industry had a gross product of NOK 47,2 billion in 1998, which means that the industry’s contribution to the gross national product (GNP) was

approximately 4,3 percent. Within the industry, it is the transport services that make the largest contribution to the GNP, with NOK 18,2 billion in 1998, but it is the arrangement enterprises that have experienced the largest growth in gross product between 1990 and 1998. The service businesses went through a decrease in gross product in the middle of the nineties, but the tendency has inverted, and the course of development has been positive since 1996. The gross product of the overnight accommodation services has been on a stable level of NOK 6 billion in the nineties. The figure below indicates how the gross product is dispersed among the different services in the industry.

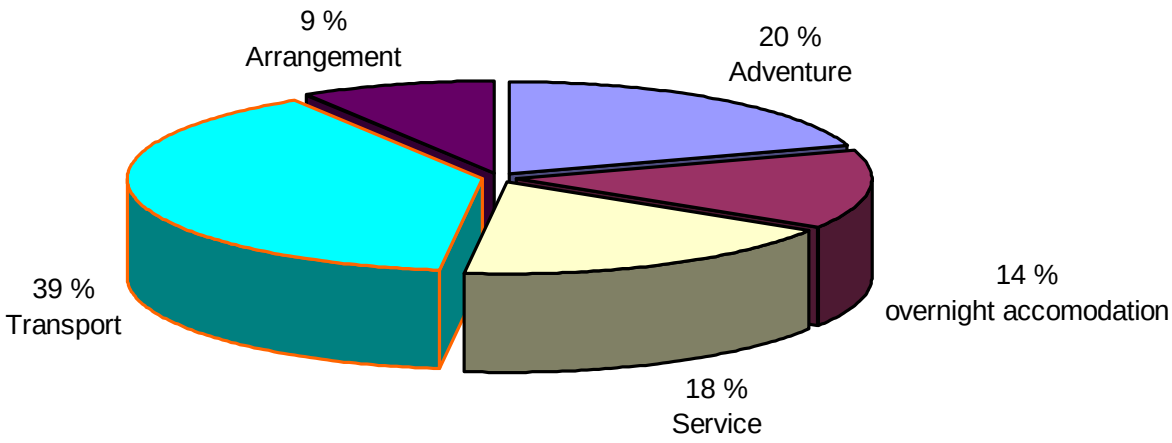

Figure 15: Gross product dispersion in the Norwegian travel industry (St.meld. no 15, 1999 – 2000)

Both business travelers and holidaymakers are included in the traveler group. It is worth noting that a major part of the services related to this particular industry, are delivered to other people than travelers. The figure below indicates the sales to the travelers in relation to the total production (100 %) of the travel industry in 1995, included sale to foreign travelers in Norway (export).

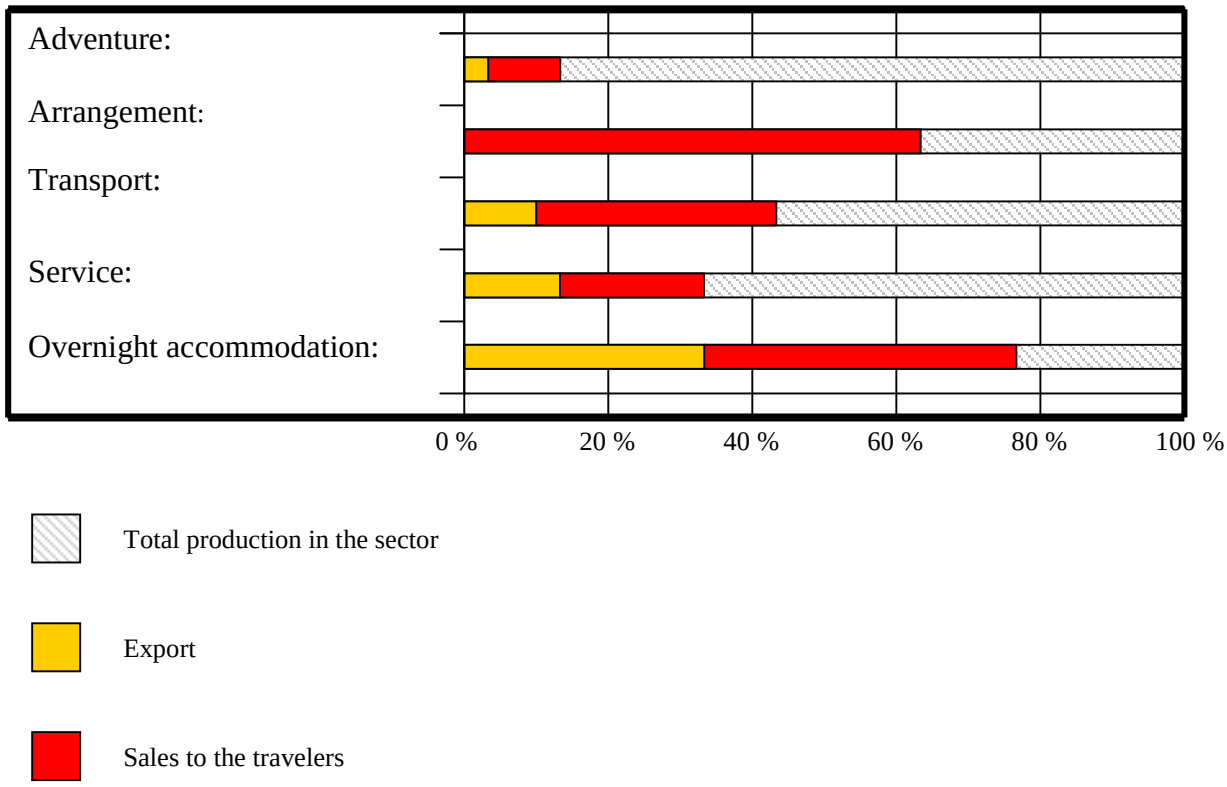

Figure 16: Sales to travelers in relation to total production in the Norwegian travel

It is common to make a distinction between business and tourist markets. The focus of this report will mainly be on the parts of the travel industry that are perceived to be of fundamental importance to business travelers, that is arrangement, transport and overnight accommodation. This means that we will give lower priority to leisure activities, and mainly focus on air transport, overnight accommodation (in hotels), and car rental. Because of this business perspective, we will consider certain valuable supplementary services in relation to journeys of this kind as well (e.g. insurance and payment arrangements.)

5.1.1 Overnight Accommodation

Our focus on the business sector of the travel industry, imply that we concentrate on the hotel part of the overnight accommodation service. The hotel business has experienced a considerably increase in overnight stops, but the growth of the lodging trade is weaker through the nineties than before.

Integration and alliance building, particularly establishment of larger business chains, characterize the development of the hotel services in Norway. These chains gain competitive advantage by focusing on brand image building, and various efforts in order to increase customer loyalty. The size of the chains can enhance the possibilities for an increase in bargaining power relative to travel agencies and tour operators, and boost the chances for settlement of cooperation agreements with transport and arrangement companies in order to offer composite products.

5.1.2 Transport

Domestic and international air transport mainly consists of regular services and charter traffic; the former is of primary interest in this report. SAS, Widerøe's Flyveselskap and Braathens are the leading airlines in Norway, but more than 40 airlines operate between Norway and foreign countries.

Today the business travelers are the most important customers to the airlines, but the introduction of more and larger discounts on airline tickets has resulted in an increase in leisure traffic.

5.1.3 Arrangement

Refinement and distribution in the travel industry are taken care of by companies and participants within procurement, information, marketing, product development and sales. The industry consists of a commercial part and a group of companies that don't have profit as their main target.

The travel agencies and the tour operators have a dominating position in the former part of the industry. Because of our focus on business travels, we will concentrate on the travel agencies, and by that omit the tour operators that are mainly involved in leisure travels.
There has been an extensive structural change among Norwegian travel agencies, which is mainly caused by merging and acquisition. A few enterprises have a dominating marked share, and the numbers of agencies that operate only in Norway are decreasing. Some of the major participants are associated with large international enterprises.
Even though the travel agencies have maintained their importance as a sales channel, they are under considerable strain. The travel agencies' position in proportion to large suppliers, e.g. hotel chains and large airlines, are weakened. Traditionally, the suppliers have had a weak negotiating position, but the situation is now reversing because of owner concentration and chain building. We are also experiencing a shift in power, from distributors to customers.

5.1.4 New Technology and Tourism – The Internet

After broadcasting for 38 years, radio had about 50 million listeners, while television needed 13 years to reach that kind of an audience. The Internet really did not become publicly accessible until 1993, and six years later there where 150 million users world wide. There are more than 1 billion Internet-sites on the web today.

In Europe, there are about 50 million households with Internet-access. This represents approximately 13% of the population, but barely 10% of these used Internet to purchase goods and/or services; i.e. 1,2% of households with Internet-connection. In 2002, it is expected to be more than 140 million Europeans on the net, and about 25% of them will use Internet for commercial purposes. The number of buyers on the Internet is expected to reach 8,5% in the year 2002; against 1,2% today (Source: IDC-estimate; http://www.idc.com/idc7/data/global/content).

Internet is one component of the ongoing digital revolution that will change the fight for customers in the traveling industry. Others are technological innovations in the mobile phones-market, digital television and wideband Internet through cable-TV. Of course, other types of electronic networks, like EDI, Extranet and other LAN-technologies are important as

well. However, the Internet is expected be the most influential of these technologies when it comes to buying travel related products. Different analysis agencies predict that the traveling industry will become the largest industry on the net. The results of an analysis carried out by European Information Technology Observatory (EITO) are shown below:

Product	**1997**	**2002**
Tourism	9%	34%
Software	13%	10%
Books	12%	10%
Insurance	1%	9%
Music	10%	8%
Clothes	18%	7%
Hardware	9%	6%
Others	28%	17%

Datamonitor, one of Europe's leading IT-analysts, predicted in 1998 the following potential of online tourism trade in Europe:

- Tourism constituted 7% of online trade in 1998
- Tourism will constitute 35% of online trade within 2002
- In the period between 1998 – 2002, online trade will increase by approx. 5000%

Within the same study, Datamonitor estimated the following distribution percentage of different product groups:

- Personal flights 44%
- Business flights 22%
- Personal hotel 15%
- Business hotel 10%
- Charter tourism 8-10%

The High Online Potential within the Traveling Industry

The potential of the Internet is highest in sectors where there are a lot of agents/third parties involved, and where the transactions do not involve physical products. These attributes are exactly the defining characteristics of products in the traveling sector. Products with high information content can be bought without having to be physically distributed to the customer. The paper ticket is on its way out, and E-tickets are taking its place. In the USA today, more than 50% of the airlines customers book their flights with E-tickets. Other important aspects are:

- The profiles on the most frequent travelers also match the profiles of Internet users. In other words, the marketing medium is well suited in getting consumers attention.
- The price on hotel-rooms, flights etc. change quite rapidly. Through the use of Internet, the producers are able to distribute their products as "last minute offers", and thereby increasing their load factor. Also, due to rapidly changing prices on these products, it is not very cost-effective to use fixed price-lists.
- Using traditional distribution channels, the distribution costs per ticket is about 20 – 25%. Using Internet as a tool, the costs represent a fraction.
- The trend is moving in the direction from group tourism towards traveling alone. Adventure travels are getting more and more popular, and fewer choose package tours. Through the Internet, the traveler gets a much more powerful and dynamic tool in planning his or her vacation. This makes it easy to plan the travel-route and choose between different options.

There are quite a few different opinions and prognoses of turnover with regards to the traveling industry and use of Internet. The optimistic ones predict that 20 – 30% of all bookings will take place via the Internet within 3 - 5 years. Although, many product providers experience that the development in turnover is expanding slower than assumed.

In 2000, online distribution of traveling products amounted to approximately $660 billion. Forrester Research estimates the following development in online turnover, within the traveling industry in the USA, in the period 1998 – 2003 as shown below:

Product	**1998**	**2003**
Air-plane tickets	52%	36%
Hotels	36%	34%
Package tours	6%	16%
Car-rental	6%	5%
Cruise	-	8%

In Norway, there are 1,8 million people with Internet-access, which is 28% of all Norwegian households. This implies an increase of 200 000 households in the past 18 months. A number that puts Norway among the "best" in the world, together with USA and the other Scandinavian countries. However, surveys show that Norwegians/Scandinavians purchase less on the Internet than for instance Germans (Source: Norsk Gallup, Interact 5/99).

New Media Science/Synergy Rf did a study revealing Norwegian Internet habits, based on a selection of 815 respondents. Some of the results are listed below:

- 86% had searched for products and/or services which they where interested in buying
- 47% had bought something, and 22% of these had done impulse purchases based on net-ads
- 21% had carried out a purchase in a physical store, based on their Internet-search
- 88% of the Internet shoppers where satisfied with the result, and
- 28% of the respondents answered that they spent less time watching TV after they started using the Internet

(Source: Analysen 2/99)

Software and computer games were the most popular products at the time of the study. However, concert-, theatre- and cinema-tickets, airplane tickets, music and books toped the list of things that the respondents where likely to buy on the net in the future.

Another user-study, done by SAS (Scandinavian Airline Systems), show that every third Norwegian uses Internet to plan personal travels and holidays. The study also shows that about 4% of the travelers have booked journeys on the net.

The referred studies tell us that there is a considerable interest among travelers to explore and use the Internet in their planning and buying of travel related products. They tell us nothing about the direction the market will move, but it is clear that the consumers see the advantages. Therefore, it is assumed that the growth of e-commerce in the traveling industry, as well as for a lot of other industries, depend on how fast the industry itself are able to develop user-friendly and noticeable web-sites, both on a macro and micro level.

5.2 Value Chain Description

This stage focuses on describing the characteristics and dynamics of the value chain in the travel industry. More specifically, we will identify and describe the roles and activities of different actors in the value chain of composite business travels.

The objective of this section is to present the value chain in such detail that it is possible to gain insight in the characteristics of the different tiers and the relations pertaining to each tier, the marketplaces in which products and services are exchanged, and the intermediaries that operate in the relevant marketplaces. This description will be accomplished with a view to business travels.

5.2.1 Relevant actors

There are many potential actors involved in travel products. The value chain of a specific business travel depends on the needs and wishes of the traveler, and thus varies. The figure below identifies five central components of the traditional distribution of travel products, which are fundamental to business travels as well.

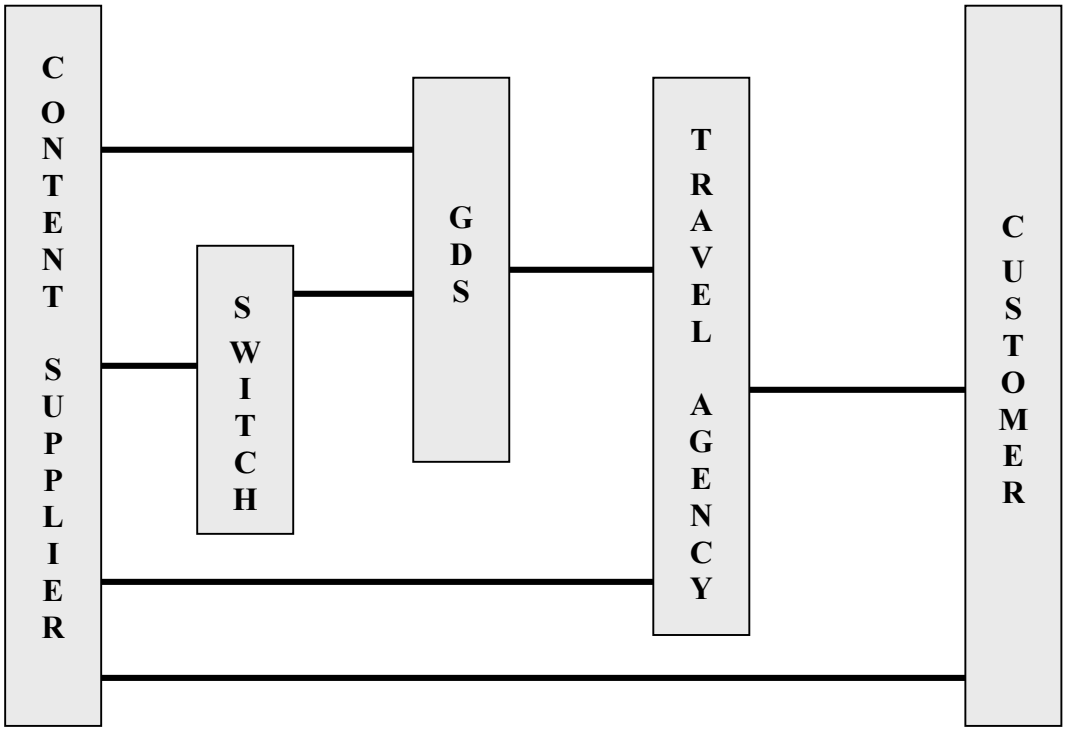

Figure 17: Traditional distribution of travel products

In addition to the actors that are included in distribution of travel products on the physical marketplace, there are some new actors that have appeared as a consequence of extensive technological development. The portal is such a new actor in the travel industry. This Internet-based intermediary owns the customers connection to the world. It is common to differentiate between horizontal and vertical portals, where the former provides general information, and the latter is a domain specific information supplier. In addition to this, new on-line channels characterized by a lack of geographic entrance barriers, have allowed a flood of new global actors into the travel agent's marketplace:

- Controllers of distribution: offer a primary service, and attract users to their website because of the information and services it provides (e.g. horizontal portals as AOL.com, Yahoo.com, TV2.no, SOL.no, and vertical portals as TravelMarket.no, TravelMart.no).
- Travel distributors: businesses that already have a strong foothold in travel distribution (e.g. Travelocity, TravelWeb and Travellink).

- Microsoft: a software brand, which has established itself as a portal into the world of computing.
- Existing travel companies: e.g. travel agencies that offer reservations via the Internet.
- External opportunists: companies that have seen the opportunities and have started new on-line travel ventures.

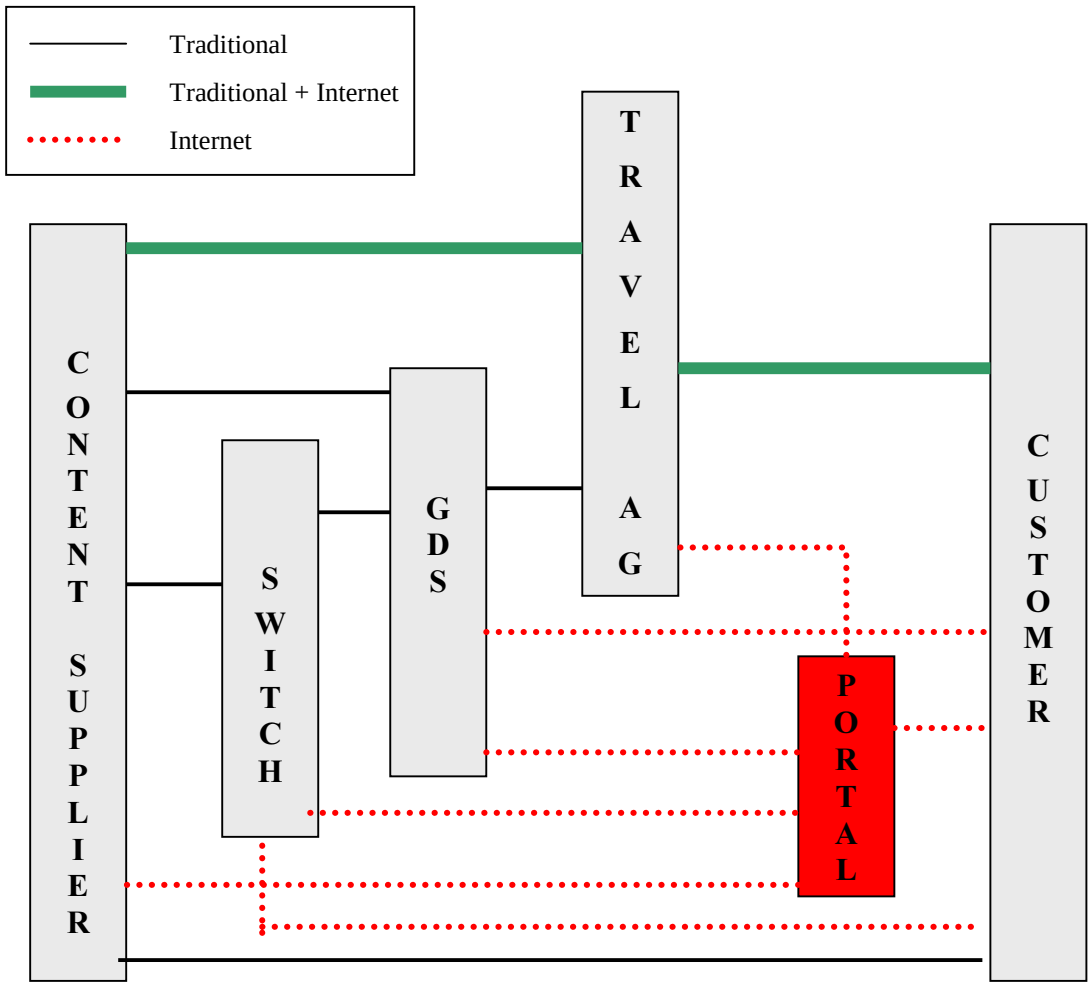

Figure 18: Distribution in the travel industry.

5.2.2 Description of value chain components

Travel Agents

The most central intermediary in the travel industry is the travel agency. The role of the travel agencies is primarily to offer travel services to customers on behalf of the content suppliers. The content suppliers can be hotels, car rental agencies, airlines, etc, or it can be tour operators that offer composite products. An agent may also offer travel-related services such as insurance or foreign exchange. For providing these services, the travel agent is rewarded by transaction charges from the customers and commissions from the content suppliers. Typically, commissions amounts to 10 percent of the selling price, but this is normally 1 or 2 percent less for airline tickets, hotel bookings and rail travels. Insurance will usually generate commissions of around 30 percent, and car hire can on occasions make considerably more than the basic 10 percent.

It is suggested that the agent's main concern should be the choice of location to ensure ready availability of the content suppliers products in the market place. The agent has access to the content suppliers stock through the reservation system and here efficiency is important. Instant availability permits the agents to share the booking process with the customer to reinforce the buying decision. This approach to the role of the travel agent likens the agent to a "filling station" for travel.
An alternative view argues that the acquisition of product knowledge and the assumption of the risks involved in assessing the extent and nature of demand is the job of the travel agent. The agent should thus take on the role of a travel counselor to give the public impartial advice, and should seek to generate business in the local market area.

Today, travel agencies handle approximately 70-80 percent of the business journeys that involve air travel, and 20-30 percent of the hotel reservations related to business journeys. The challenge that travel agencies are facing is that when the profit margins are decreasing, the agencies have to leave a part of the reservation to the travelers, while at the same time make sure that the quality is adequate. Also, they have to invent appropriate price mechanisms considering the uncertainty regarding travelers' willingness to pay for systems where they carry out most of the job themselves.

The travel agencies share of business travels will to some extent decrease, and reservation requires will be sent directly to the content suppliers. It is difficult to estimate the extensiveness and time scale of these changes, but a Norwegian report (Statusanalyse: Internett i Norsk næringsliv, 1999) presents the following scenario:

Distribution form:	**Now:**	**In the future:**
Travel agencies	70-80 %	approx. 40 %
Direct sales	20 %	approx. 40 %
Internet	1-3 %	approx. 15-20 %

GDSs *(Global Distribution Systems)*

An enormous growth in air travel in the seventies created a need for distribution systems that would allow travel agents to make airline bookings direct into the airline computer reservation systems. This resulted in the development of the GDSs, which changed the way journeys are bought and sold around the world. Today, distribution of travel services, especially reservation of airline tickets, is mainly accomplished via GDSs. A GDS can be defined as "a computer distribution system for displaying available services, affecting bookings, and ticketing by tourism producers – airlines or otherwise – on an international scale". There are four major GDSs: Amadeus, Galileo, Sabre and Worldspan. Amadeus is the largest, and hold the dominating position in Norway. It was founded in 1987 by Air France, Iberia, SAS and Lufthansa, with the intention of offering an effective and neutral distribution channel to the market. Today, Amadeus exists in 121 countries, and has a market share close to 30%. Amadeus consists of a central database, Amadeus Central System, witch support information seeking, reservation, pricing and travel administration. Amadeus is distributed and promoted locally through National Marketing Companies (NMC), and the name "Amadeus" is used in most countries. The exceptions are Germany (uses the name START) and the Scandinavian countries (SMART).

In recent times the GDSs have been seeking to diversify and extend their business offering in three areas: by product, by improved front-end technology and by changing the nature of the business they conduct.

- Product diversification

Because of the captive audience of travel agents that the GDSs created, a natural diversification was to extend the type of product that could be sold via their systems. In spite of some initial problems regarding extension of the technological systems, all the GDSs now successfully distribute hotel accommodation and car rental. However, the GDSs infrastructure cannot easily accommodate the diverse nature of the non-air products.

- Technology extension

The established method of access has been via a dumb terminal in command-line mode. This required and still requires a high level of operator training. However, front-end diversification has seen the introduction of Windows-based technology. In addition, some GDSs have developed Internet-based booking tools that enable business travelers to make bookings directly from their PCs. These are then queued by the GDS to the business traveler's preferred agent for administration and ticketing.

- Business extension

The GDSs have recognized that in order to survive they must be involved in the new online travel market, and thus extend their business to become online travel agents.

Switch-Systems

During the 1980s, as a natural extension to the airline business, GDSs started to link up with the major hotel CRS systems. But the GDSs were custom-made to handle airline ticket reservations, and the hotel reservation systems where not accustomed to the GDSs. Thus, the static data stored on the GDSs resulted in confirmation problems while the value chain steadily increased in size. Agents did not have direct access to the hotels' systems, and where exasperated by time differences, disparate communication standards and a lack of uniformity.
However, in recent years the GDSs are extended in a way that it is possible to include hotel booking, car rental and other related services through these systems. This is made possible by

so-called “switch” systems, which are able to connect the reservation systems to the hotels in a way that make the hotels available through the GDSs.

In 1998, 15 major hotel companies established The Hotel Industry Switch Company (THISCO), and built a common user interface (UltraSwitch) between their systems and the GDSs. Today, THISCO is renamed Pegasus Systems Inc., and connects more than 50 000 hotels with the main GDSs, including Galileo’s “Inside Availability”, Worldspan’s “Hotel Select”, SABRE’s “Direct Connect Availability” and Amadeus’ “Complete Access Plus”.

The most common switch systems are Pegasus, WizCom, Worldsres, and HotelBank. Today, Scandinavian hotel chains and individual hotels cooperate with three of the switches:

The following services are offered by *Pegasus Systems*:

- TravelWeb.com is Pegasus’ website. Customers can make reservations on this site without passing through the GDSs. Users of the TravelWeb can seek hotels based on travel target, chain preference, price, etc.
- Pegasus Online Distribution Service. Pegasus’ Internet based reservation system is used by 60 percent of the most visited travel websites in the world, e.g. Preview Travel and Microsoft Expedia.
- Pegasus Commission Processing. Pegasus collects and pays provisions from hotels to travel agencies. Thus, the hotels and travel agencies save money because of reduced bank charges.

Wizcom is the next largest of the switch systems. The central reservation system Supranational, where RICA is a member, cooperates with Wizcom. Wizcom doesn’t have it’s own website for hotel reservations, but cooperate with the large Internet actors Worldres and Leisure Planet.

HotelBank is a central booking system for hotel chains and individual hotels, developed in Scandinavia by Nordic Team in 1985. In 1995, the international hotel system provider Micro Fidelio bought the system. HotelBank is connected to the four large GDSs (Amadeus, Galileo, Sabre and Worldspan). Most of the leading hotel chains in Norway have chosen HotelBank as

their central reservation system. It is estimated that 21 percent of the hotel reservations in the world where made by travel agencies in 1997, but only about 50 percent of these reservations where made through GDSs.

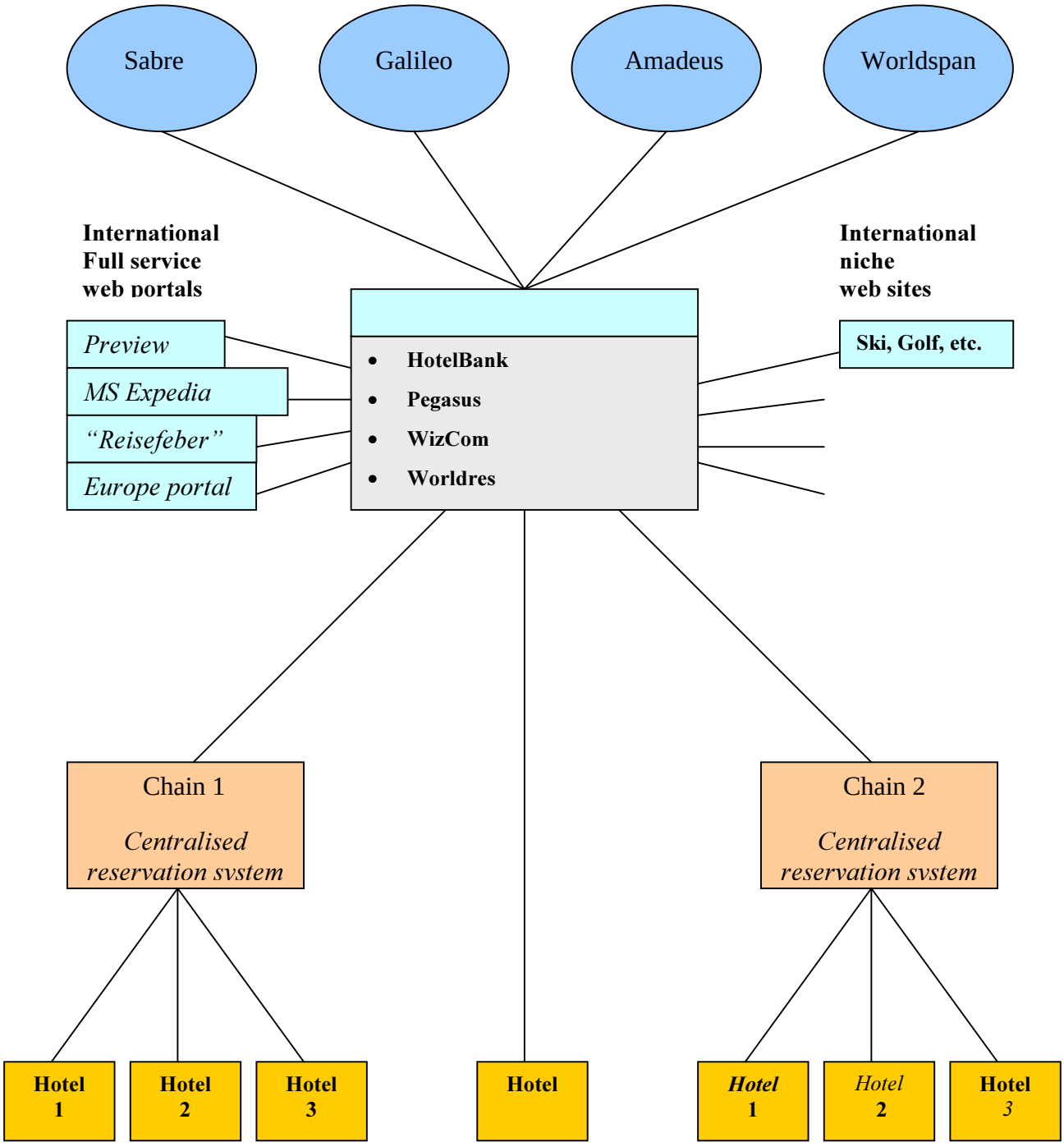

Figure 19: International distribution of hotel services (Statusanalyse: Internett i Norsk næringsliv, 1999)

5.2.3 Technological impacts on travel services distribution

The major advances in electronic travel distribution are the deskilling of the reservation process and increased reach to consumers. As a result of this extensive technological development, we are witnessing a change in distribution channels from the physical marketplace – distribution via traditional channels – to the electronic marketplace (e.g. Internet). Internet is well suited for direct distribution from content suppliers (e.g. airlines, hotels, car rental agencies) to consumers, which implies comprehensive structural changes in distribution of travel services. The growing number of consumers that connect directly to content suppliers will result in travel companies adopting the strategies of one-to-one relationship marketing.

The advance in distribution technology just described will cause the marketplace to polarize. The losers will be intermediaries that don't grow to become global players or are not small enough to adopt strategies of niche marketing. Of those intermediaries that are currently in the middle ground, there will be few survivors. The suppliers in the industry are already placing intermediaries under pressure. Airlines have adopted commission capping, which illustrate that the content suppliers are clear winners; not only can they reap the benefits of worldwide distribution via the global players, they can now cost-effectively sell their products and services directly to the consumers.

Among on-line actors in the travel market, we also see a development towards a more realistic and moderate view with regards to negotiating contracts, developing Internet strategies and building relations using Internet as medium. Through interviews with some of the leading on-line travel agencies in Norway, it has become clear that thoughts on how to succeed in the virtual marketplace have changed within the last 12 – 18 months. The "new economy" is no longer seen as something that will totally change the way of doing business, thus leading to a development where these on-line companies go "back to basic". Recognizing the fact that in order to survive, it is still as important to negotiate critical contracts with suppliers and customers, actually being able to add some value in the market value chain, and having a fundamentally solid economic foundation. The Internet is thus seen more as an efficient tool of communication and interface towards consumers, rather than a fundamentally new way of doing business.

5.3 Case Study Presentation: Berg-Hansen Reisebureau AS

5.3.1 Background information

Berg Hansen Reisebureau AS (BH) is the parent company in a full service travel agency corporate group. It includes activity in the travel agency chain Berg-Hansen, operating in the professional market, and the leisure chain Informa. Because of our focus on the business market, only the former part of the group is included in the case study.

BH's vision is to have the most committed co-workers, and to alter the industry by being the most offensive consultants and advisers in the professional market for traveling. Their business idea is to attend customers' travel investments in the most appropriate ways through active counseling, mediation and management of travel services. BH regards them selves as a cost effective distributor, while at the same time trying to create and add value for their customers.

By virtue of being a specialist in the professional market for travel services, BH offers a total product. In other words a product that exists of a whole range of different elements, acknowledging the customers needs both before, during and after their trips.

BH is a member of Carlson Wagonlit Travel, which is the world largest travel agency with more than 3000 members in 141 countries. In addition, BH has a number of subsidiaries in which it has 100% ownership:

- *Berg-Hansen Reisebureau Oslo AS**
- *Berg-Hansen Reisebureau Stavanger AS**
- *Berg-Hansen Reisebureau Telemark AS*
- *Berg-Hansen Reisebureau Ålesund AS*
- *Berg-Hansen Bygg AS, with the subsidiary Ditt Eiendomsselskap AS*
- *Berg-Hansen Reisebureau Bergen AS*, with the subsidiary Horizont Travel AS*
- *Informa Feriesenter AS*
- *Ditt Reisebyrå AS*

* Berg Hansen Reisebureau Oslo AS, Berg Hansen Reisebureau Stavanger AS, and Berg Hansen Reisebureau Bergen AS merged with Berg-Hansen Reisebureau AS, effecting 1st of January 2000.

BH doesn't have any subsidiaries or departments abroad. The figures regarding number of employees and revenue the last three years, have been quite stable, with a small decrease for year 2000:

Employees	**Net income**	**Revenue**
1998: 461	*1998: 37,9*	*1998: 2.734*
1999: 473	*1999: 29,6*	*1999: 2.587*
2000: 430 (2nd int.)	*2000: 27,8 (2nd int.)*	*2000: 1.849 (2nd int.)*

5.3.2 Markets and Structure

BH's relations upstream (suppliers) and downstream (customers) are quite complex, and do not fit very well within the frames of a traditional value chain logic. BH defines some of their customers as "large-scale consumers", which in turn leads to a different approach to this segment. An example of such a customer is Statoil.

Upstream, BH cooperates with SMART[11] on different services related to booking via Internet. Through a search-engine, the customers get access to 480 airlines, 50 000 hotel, and 60 car-rental agencies.

There have been, and still are, some structural movement in the travel industry market, much because of the implementation of new technology within and across firm boundaries. However, there are only a few major actors in the market where BH competes. Thus, major competitors rarely enter or exit the market. This applies to the content suppliers group as well. Merges and acquisitions within the Norwegian business-travel market (e.g. NSB Reisebyrå

[11] SMART is a supplier of electronic travel services; information services, ticket reservation, and payment.

and Flyspesialisten are acquisitioned by VIA) through the last few years, have led to the following picture, where there are now three major actors:

- *Via* *adv. 30% market share*
- *Bennet* *adv. 19% market share*
- *Berg-Hansen* *adv. 19% market share*

The remaining part of the market share is hold by content suppliers (30 – 35%), and their share is expected to increase.

In addition to changes among already establishes actors, new ones have emerged as a consequence of technological opportunities, mainly brought about by the Internet (e.g. Travis). Their ability to capture market shares has so fare been insignificant, and according to Villadsen (CEO in BH), it will remain so. He claims that many of these "newcomers" operate as specific agents or portals, and has no real "product" in the sense of airline-tickets, hotel-rooms etc. They mediate/transmit all value added transactions to actors like BH upper left box, figure 6), and are therefore dependent on their rivals to survive. In this sense, these new actors add no real value to the products, beyond what established actors do.

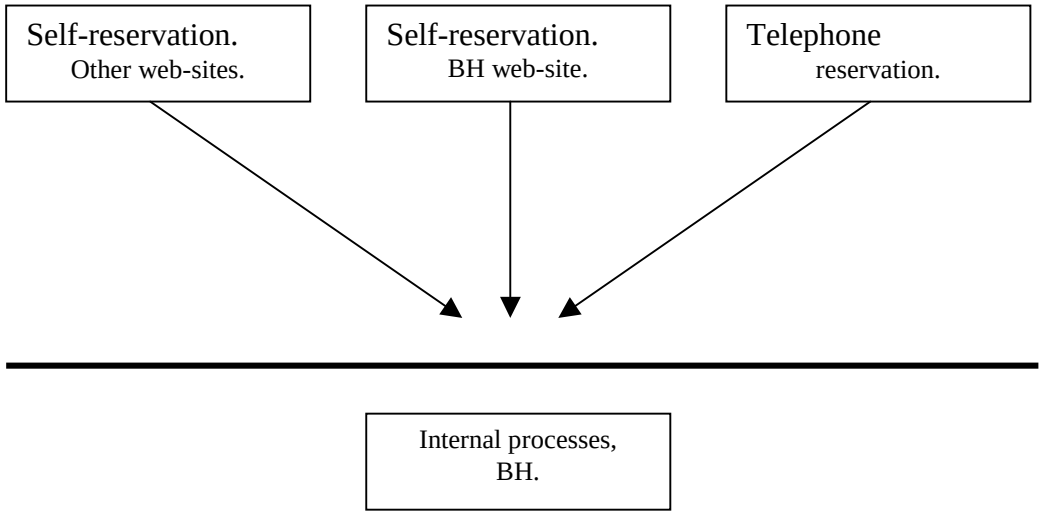

Figure 20: Electronic travel reservation in Berg Hansen.

Considering how already established actors position themselves, and the amount of know-how these actors hold, BH thinks that new players will have a hard time taking any significant share of the travel market; at least regarding the professional part of it.

As stated earlier, specific features of the travel industry marked makes it difficult to analyze by applying traditional value chain logic. One of these features is that the content suppliers, which BH is dependent on, are BH's largest competitors (notice that content suppliers holds 30 – 35% of this market). As new online technologies generate enhanced possibilities regarding direct distribution of travel services from content suppliers to customers, this competitive situation are likely to increase in importance. Thus, the extent to which major content suppliers succeed with this strategy, are likely to have extensive impacts on the market structure in the travel industry.

Together with the content suppliers, the GDSs have a very important and powerful role. BH cooperates with Amadeus, which holds about 95% of the Norwegian market. According to Villadsen, profit margins are slim, and **volume** becomes important to earning potential. The GDSs have huge transaction volumes, and are therefore in a very strong position. In addition, they have the means, opportunities, and willpower to act innovative. According to BH, **Innovation** and volume are the most important factors for success in the travel industry.

5.3.3 Business Profile of the Firm

BH's **product** is built around a travel order, which in turn is expanded to include a wide range of complementary services. An example of such a service is "Din Side". This is a customer-oriented web site, meant to accommodate all questions the customer may have regarding his or her own trips. Through this web site, customers have access to their customer service on a 24-hour basis. As BH's core product is a travel order, other service providers and producers have to take care of other parts (e.g. insurance products) of a composite product or service.

BH is reluctant to profit on bookings where the customer runs through all the transactions him/herself. It is interesting to know, that 1 of 3 calls to the BH call-center has different concerns than the order itself. This implies that BH's largest income potential lies in offering complementary services, where innovation and volume are critical aspects. Earlier, BH and

other travel agencies focused on getting customers to buy the most expensive tickets, but this have changed. Now BH has to "play on the same team" as their customers. An example of such change in consumer focus is the way BH helps their customers signing contractual agreements with content suppliers.

Automation and integration are keywords describing BH's business strategy. For example, they have direct lines (EDI) to Statoil's SAP system, which is invoiced by approx. NOK 500 000 000 each year. In this way, Statoil lower their travel related administrative costs. At the same time, this cooperation works as a lock-in strategy; it would by costly for Statoil to enter into a partnership with other travel agencies due to investments in network technology.

More generally, BH has cooperational agreements with customers which function as guidelines and regulations for prices and services offered. Further, these agreements work as tools that help carrying through travel policies, which systemizes business travels and lay the foundation for reduced travel costs.

BH has tight connections with their associated company "PLUS reiser", which is a conference-, congress- and convention organizer. "PLUS reiser" is a member of ICCA (International Congress and Convention Association), thus giving BH access to the international congress market. BH is a member of Carson Wagonlit Travel, which is the world's largest travel agency chain. This partnership gives BH a strengthened bargaining position facing airlines, hotels and other subcontractors. It is important for BH to appear and operate as an objective agent in its relation with content suppliers, and their wish to promote and sell particular products. BH also cooperates with SMART on an online booking-service.

5.3.4 Technology profile of the firm

Electronic Networks

Internally, BH uses a 10 MB integrated Windows NT network between its departments, which communicates by using Internet technologies/protocols (TCP/IP). None of BH's different departments or offices possesses their own technological equipment. All purchases are made at the central office, and then hired out to local departments. In this way, processes for

standardization, renewal, and development are done in a much more efficient way. At the same time, advantages of scale are obtained when technological equipment is bought. BH is planning to start using a central server and thin clients, and thereby simplify and coordinate the process of updating the systems.

In order to both simplify and provide cost effective handling of travel order processes, BH offers EDI solutions to large corporate customers (e.g. the Statoil-solution mentioned before). This technology supports streamlining of the most important business processes, like ordering, invoicing, payment and delivery. BH's invoicing-system, called M3, is developed in cooperation with BH's largest customers and experts in the travel industry. M3 makes sure that specific requests of different customers, regarding the appearance and frequency of the invoice, as well as it references, are handled according to existing agreements and contracts.

BH also offers Extranet solutions, represented as customer specific web sites. The larger customers have their own URL, and the on-logging process determines the interface and contents of the web sites. In addition, they offer a range of different electronic booking solutions:

- Email: The customer can negotiate demands and wishes in free text.
- Web Travel Order: Users fill in text in fixed columns.
- Internet: The customers can go through an online booking process of flights, hotels and/or cars. Thus, BH uses Internet as a sale- and distribution channel.
- Extranet: Works like the Internet-solution. BH has the opportunity to customize services according to the clients' travel policies.

The use of new technology to support electronic transactions has made it possible to realize new ways of communicating with customers. BH captures information about their customers through electronic transactions, which in next instance form the basis for different marketing strategies. Via BH's web site, users can:

- Order tickets.
- Gather information about available flights and prices.
- Get in touch with BH.

- Find information about the services and products BH offers.
- Find information and news from BH's suppliers.
- Check foreign exchange quotations.
- Find city maps and airport information.
- Check weather forecasts for the travel target of current interest.

These services, together with the development of new marketing strategies towards one-to-one marketing, Villadsen think it is fictitious to distinguish between B to B, and B to C electronic commerce. New technology makes it possible to build one-to-one relations with the customers regardless of whether these customers are business companies or private individuals. This kind of individualization of institutions is a prioritized area in BH, which calls these customers "industrial customers". The motive is not to sell complementary products, but to strengthen the relationship between BH and each individual customer.

Information generated through electronic transactions with customers (also call-centers), is stored with the intention of future analysis of manpower issues, together with frequent and proactive follow-ups of different quality standards. Through cooperation and dialogs, BH has developed tools capable of working out strategies for "correct" service and individual adaptation.

BH has not developed any strategy for online buying from their suppliers, thus BH's Internet focus is first and foremost directed towards their customers.

5.4 Interview Response

5.4.1 Motivation

By becoming the leading online travel agency in the business market, BH hopes to capture market shares, and at the same time direct their customers towards self-service applications. Customers become their own travel advisers, and BH's strategy for e-business is accomplished through the automation of transaction processes, such as ticketing, invoicing and managing documents. According to BH, the most comprehensive effects brought about

by information technology and Internet, is the automation of both internal and external processes.

The call-center is BH's most important channel of order bookings. BH doesn't believe that this will change, and assumes that the call center's position as the leading reservation channel will remain in the future. However, Villadsen believes that about 20% of all customers, who are connected to BH through contractual agreements, will make use of BH's fully integrated Internet solution. Today, more than one thousand (1000) customers check their travels at BH's web site each day. Though future challenges are great, especially within the area of marketing, BH believes that their strategy regarding implementation of a fully integrated e-business solution enables them to accommodate these challenges. Through their systems, BH is able to accumulate information and thus increase their knowledge about their customers. This knowledge will in turn be used as a basis for new marketing strategies, as customization and one-to-one marketing becomes more and more important. Partly due to this commitment in implementing a fully integrated e-business solution, BH is increasing their marketing budgets.

BH is not willing to make a separation between "online" and "offline" divisions, but continue to develop their vertical integration solution. However, BH experiences difficulties in finding the right balance between tradition on one side, and a new and perhaps more innovative image on the other. This is problematic as innovativeness may be a key success factor in the "new economy".

In the future, BH's core product (travel order) will be available free of charge. Technology has resulted in the development of complementary services, which will constitute BH's income in the future. Hence, there are great challenges and opportunities in differentiating on price and product. The ability to act innovative and differentiate within the areas of price-, product- and marketing-strategies, will be important success-factors for BH (see figure 7).

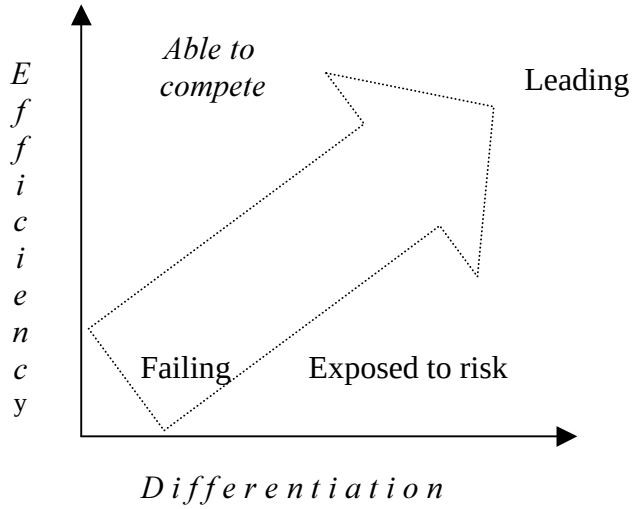

Figure 21: Importance of efficiency and differentiation for success.

Despite an increase of new actors as a consequence of Internet and e-business technology, BH doesn't perceive these newcomers as threatening to their position in the market. BH expects the majority of these new actors to disappear quite fast as a consequence of not being able to capture a big enough market share. According to BH, those who manage to survive will be bought up by already strong and established competitors. However, some of the newcomers will probably survive by employing a highly specific market focus, and thus operate in niche markets. On this basis, there is a strong believe that the current value chain structure in the travel industry, will remain stable in the years to come. However, stability is a relative concept, and it is more or less impossible to predict how the value chain situation in the travel industry will be in the future.

5.4.2 Obstacles and advantages

Internal factors

The costs related to technological investments are very high, which is seen as a restraining factor in utilizing the potential of e-commerce. In addition, technology also requires specialized knowledge, but BH does not see this as a problem.

BH's fully integrated e-business solution has lead to an increase in the number of skills each employee must possess. Thus, the need for both skill acquisition and maintenance has augmented. Before BH realized this strategy, a lot of the company's expertise left because of more interesting job-opportunities elsewhere (e.g. in dot-com companies). By vertically integrating transaction- and business processes, their are now able to keep expertise in-house.

Legal/privacy issues – Through the creation of profiles etc., BH's customers will register personal information, and thereby accept the terms of use for this information. This means that legal issues related to such use, are getting less complex, and that those who have a special license for using this kind of information, will lose some of their competitive advantage. BH is one of these license owners, but do not see this as a problem.

Public factors

BH holds the opinion that the government should be an adviser or organizer, and not focus on regulative aspects of e-business markets. Nor should it be concerned with active participation in e-commerce as such; e.g. establishing traveling portals.

Strategic factors

The establishment of "Din Side" is supposed to simplify customer tasks, and increase control over the product they are buying. Together with one-to-one marketing and customization of services, this is likely to increase loyalty and trust among BH's customers, which again will make it more difficult for the customers to end existing business-relations to BH.

Finally, an important promotive factor for making e-business a priority area, is the faith BH's management has in the opportunities of new technology. In BH, being able to carry out their e-strategy as a vertically integrated company is given high priority.

5.4.3 Impacts

The most important impacts of electronic commerce on business functions related to transaction processes, where the automation of all service processes, and the reduction of administrative costs. BH has cut their administrative costs by 20 man-labor years, due to automation processes.

Regarding general business processes, electronic commerce innovations have lead to the development of **complementary** services, which in the future will represent the larger part of BH's income. The customers will carry out most of the tasks related to ordering BH's core product. BH states that they will not charge their customers for services, where they are handling all the transactions themselves. This in turn leads to a more extensive differentiation strategy on price, product and marketing.

The value chain impacts of electronic commerce are moderate. However, quite a few new actors, which specialize on specific parts of travel services, operate in the market as a consequence of the opportunities Internet brings. But according to Villadsen, the industry's value chain structure will not undergo any major changes. The market will stabilize.

BH has gained a lot of new customers over the last year or so, and their annual turnover has increased. This development occurred after BH's investments in technology, and after the implementation of their e-business strategy. Still, it is impossible to say if these factors are the actual cause of these effects. It is difficult to separate the effects of e-business from the effects of other factors.

6. Summary and Conclusion

This final chapter summarizes the conceptual and methodological frameworks underlying the research project, and draws some conclusions on basis of the existing and expected market structures in the Norwegian financial services and travel industries, and the findings that emerged from the case studies.

6.1 Theory and Methodology

In order to stimulate and structure research on business-to-business electronic commerce, a conceptual framework was developed for assessing the dynamics and impacts of electronic commerce in the value chains of products and services. This research framework adopts a transaction structure approach, which aims at investigating how and why certain groups of traders exchange goods and services in specific ways, and how new information- and communication technology influence the interaction between the participants in the value chain. Further, the transaction structure approach involves a value chain perspective, focusing on control of various transaction points where exchange of goods and services occur. A transaction point is located in a marketplace, that is, all transactions take place in an economic and social environment.

All transactions consist of preparation and completion operations. The former involves placements of information about products and services in the market, and retrieval of this information by market participants. The latter includes ordering, billing and transfer of payment, and transfer of products/services from sellers to buyers. In addition, the transaction component “production support”, which involves competencies in capture and management of information, and market analysis and management, is especially important in electronic commerce. Use of information- and communication technology in any of these transaction components or operations, may lead to evolution and innovation in the transaction structure. Such technological evolution can be related to different aspects of the transaction process, and the transaction structure approach makes a distinction between product innovation (development of new products/services), process innovation (how products/services are designed and made), and relational innovation (how value chain participants interact).

Technological evolution in the design of marketplaces may influence the business relationships between buyers, sellers, and intermediaries in the value chains. However, potential changes of these relationships depend on many factors. In this respect, it is important to consider the characteristics of the products/services (digital or material) that are exchanged, and the characteristics of the transaction process (routine or negotiation). Basic to the transaction structure approach is the observation that implications of business-to-business electronic commerce will not be the same for all economic actors. The consequences of electronic commerce may vary considerably across sectors depending on these characteristics.

As proactive firms regarding implementation of electronic commerce solutions are likely to influence the evolution of buyer-seller relationships within the relevant value chains, examining changes in the relationships of these firms to key transaction points in key marketplaces can result in knowledge of changes that are likely to occur in the transaction structures of whole value chains. On this basis, the case study research was based on proactive firms in each sector.

The case study consisted of three parts: value chain mapping, field research, and analysis and validation. In the first stage, general characteristics of key products and market structures of the chosen sectors were described. In addition, a detailed description of the value chain structures of the sectors was presented. The field research phase involved desk-based research and interviews with representatives from the selected firms. This stage resulted in a detailed data set that captured the experiences and behaviors of the surveyed firms with respect to electronic commerce. The last stage involved an analysis of the collected data, describing where innovation through electronic commerce is occurring or will occur. The deliverable of this last stage was the detailed reports on electronic commerce in each sector.

6.2 Main Findings

The objective of this project was to improve the understanding of electronic commerce on business. The results that can be drawn from the sector evaluations and case studies can be summarized in the following points:

- New [and specialized] market participants.
- New distribution forms and channels.
- Increased customer focus: Differentiation and customization.
- Increased emphasis on staff training and technological development/competence.

The results implies that use of new technology to support both internal and external business functions may have major consequences for single firms as well as for entire industries. However, these changes are at a preliminary stage, and it is to early in the process to make conclusions regarding actual effects of electronic commerce on the travel and financial services industries. This is especially relevant regarding potential changes in value chain configuration, that is, what kind of actors that are involved in the value chain. New technology may alter the way products and services are produced, distributed and sold, and the sector studies indicate that new market participants will occupy specific parts of the value adding process – specialized firms find niche markets where they can exploit their specialized competence/knowledge. Niche focus will thus become an important business style and revenue-earning component (e.g. Travis and Fondsnett). As an example, fee-based intermediaries and fund supermarkets, both of which are pure mediators, are breaking up the fund value chain in the US mutual fund market. As mutual fund supermarkets are emerging in Europe as well, this development is also expected to be the case in European mutual fund markets.

The firms reported that information exchange take place over different technological solutions, even between the same partners. New tools are added to old ones, rather than substitute them, at least in first time. The companies use WWW technologies to create information exchange channels that come in addition to traditional ones. In this respect, it should be mentioned that implementation and use of new technology is higher for customer-related activities than for supplier-related activities. Both firms acknowledge that in electronic environments, the customers have more available options than they had before, which result in increasing customer focus. As an example from the financial services industry, banks open their distribution network to the products and services of third-party providers in order to always offer the best products and services. The firms also see that major parts of the future sale will be distributed over the Internet. This is the core of the companies' motivations for

engaging in electronic commerce; the firms do not want to be left behind when new developments emerge.

Internet and new technology increases the amount of available information. Firms can profitably exploit the vast amount of information made available by electronic commerce by implementing differentiation strategies to better meet customer demand and build competitive advantage (e.g. one-to-one marketing in the travel industry). Further, differentiation and customization may function as lock-in strategies (e.g. customization of web sites). We also experience that the increasing diversification of product supply rendered possible by new technology, has important effects on business-to-business relations throughout the value chains by establishing link across value chains in different sectors (e.g. provision of complementary services like whether reports by travel agencies).

As new information and communication technology are/will be fundamental to the value creation process in the travel and financial services industries, IT-skills are essential to succeed in the e-commerce environment (especially the travel industry), and can be achieved by either training current staff or by recruiting new staff. Both our case firms reported that they invest time and money on technological and personal development. However, the return on investment is very difficult to evaluate. In addition, the implementation process is at an initial stage, implying that most aspects brought out in the sector reports are related to future and expected outcomes of electronic commerce.

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Appendix A: Data Reporting Sheets – Den norske Bank

Background Information

I Position of the Firm in the Value Chain

1. Main product or product area of the enterprise:

Financial services and products.

2. Status of the enterprise

Den norske Bank ASA is a subsidiary company of DnB Holding ASA. DnB Holding ASA is a stock exchange listed parent company of the group of companies that form the DnB Group.

3. How many people does the enterprise employ nationally and world-wide?

People employed nationally		Na
People employed world-wide	7052 at the end of 2000.	Na

4. What are the revenues of the enterprise nationally and world-wide?

	Amount	Currency	
National revenues			Na
World-wide revenues	4018 million [2000]	NOK	Na

5. How many subsidiaries does the enterprise have within the country?

Number of subsidiaries in the country	18	Na

6. In how many other countries does the enterprise have subsidiaries?

Number of countries		Na

7. Estimate the number of suppliers and customers with which the enterprise does business, directly or through intermediaries?

	<10	>10 but <100	>100 but <1000	>1000	
Number of suppliers				*X*	Na
Number of customers				*X*	Na

8. Estimate the number of intermediaries with which the enterprise does business, either as a purchaser or as a seller of products.

	<5	5<10	10<20	>20	
Number of intermediaries as purchasers					Na
Number of intermediaries as sellers				X	Na

9. Roughly estimate the percentage of the suppliers that fall into each of the following categories.

	Very small enterprises (<10)	SMEs (10<250)	Large enterprises (250<500)	Very large enterprises (>500)	Public sector bodies	Individuals	
% of total number of suppliers							Na

10. Roughly estimate the percentage of customers that fall into each of the following categories.

	Very small enterprises (<10)	SMEs (10<250)	Large enterprises (250<500)	Very large enterprises (>500)	Public sector bodies	Individuals	
% of total number of customers							Na

11. Estimate the percentage of suppliers and customers that are based abroad.

	<25%	25<50%	50<75%	75 to 100%	
Percentage of customers based abroad	X				Na
Percentage of suppliers based abroad	X				Na

12. Estimate the rate of exit and entry in the market.

	Rarely	Sometimes	Frequently	
Major suppliers enter and exit the market	X			Na
Major customers enter and exit the market		X		Na
Major competitors enter and exit the market	X			Na
Major intermediaries enter and exit the market	X			Na

13. What is the influence of the following actors on market structure and conditions?

	Low influence	Moderate influence	High influence	
Major suppliers			*X*	Na
Major customers		*X*		Na
Major competitors		*X*		Na
Major intermediaries		*X*		Na

II Business Profile of the Firm

14. Describe the relevant characteristics of the products

DnB offers traditional banking products and services like loans, deposits, investment management, trading/arbitrage, payment services, financial advisory services, foreign currency- and capital market products, and different insurance services. One central aspect of financial products and services is their high information intensity [digital products]. The industry is one of the most open and most technology-driven information-based businesses we have, thus electronic services within commerce and finance are regarded as one of the big growth areas in the years ahead.

Mutual funds:
A mutual fund is a publicly traded investment vehicle that owns a basket, or collection, of individual securities (normally stocks or bonds, and in some cases a fund will own both. Mutual funds may also hold cash or cash equivalents, as in balanced and asset allocation funds). Investors can purchase shares in a fund that represent ownership in the fund's holdings. Essentially, you pool your money together with other investors, and then the fund takes that money and invests it for you. There are mutual funds of all types and varieties, but they all share some common, beneficial characteristics:

- Mutual funds are flexible investment vehicles, managed with a specific investment objective in mind
- Most mutual funds offer the benefit of diversification. Mutual funds offer investors a way to manage risk while attempting to maximize returns through the diversity of their holdings.

Mutual funds are either closed-end or open-end. A closed-end mutual fund issues only a certain number of shares. After the shares are sold and the money is invested in its portfolio of securities, trading of the fund's shares can take place. The company is not obligated to redeem its shares or issue more shares. An investor who no longer wants to hold shares in the fund may simply sell them in the market. An open-end mutual fund, by contrast, is constantly offering new shares to the public and redeeming its outstanding shares. There is no limit to the number of shares that can be issued. For the most part, open-end fund shares are bought and sold directly through the fund itself or its agents, not over-the- counter or on an exchange.

15. Describe the relevant characteristics of the transaction structure

The transaction preparation phase is characterized by negotiation and counseling, while the transaction completion phase mainly involves routine activities.

16. Describe the business structure of the firm

DnB's product range represents internally managed funds as well as funds based on sub advisory accounts fund of fund with third parties. Thus the company uses the strategy of buying products from sub-contractors and selling under their own name. However, DnB aims at giving the customers the best products, either from external suppliers or from units within the DnB Group.

DnB Investor AS is the DnB Group's mutual funds company. Asset management fee income for DnB Investor in 2000 was NOK 465,4 million, compared with NOK 239,8 million for 1999, an increase of 94,1 percent. Management fees are calculated on the funds on a continuing basis (fees range from 35 to 200 basis points depending on the type of fund). Sales commissions depend on the amount invested (up-front fees from 70 to 500 basis points depending on type of fund and client) and the amount accruing to the fund varies from 0 to 50 basis points. Commissions upon redemption are directly accrued to the various funds and vary from 0 to 100 points.

17. Describe the relevant production factor inputs

Human knowledge, IT.

III Technology Profile of the Firm

18. Which types of computer-mediated networks or applications are used to conduct or support which business activities with customers?

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising				*X*	*X*		
Catalogues & stock lists				*X*	*X*		
Information services				*X*	*X*		*X*
Negotiation							
Ordering					*X*		
Billing and payment					*X*		*X*
Finance					*X*		
Delivery	*X*						
Other							

19. How does the choice of technology relate to the type of customers?

No differentiation between customers

20. For which business activities with customers has the enterprise migrated from one network or application to another? Include planned migration in this response. In each case, indicate by entering FROM and TO in the appropriate box.

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising							
Catalogues & stock lists							
Information services					*TO*		*FROM*
Negotiation							
Ordering					*TO*		*FROM*
Billing and payment					*TO*		*FROM*
Finance							
Delivery							
Other							

21. With reference to question 20, give the main reasons for migrating or not migrating to different technologies for business activities with customers.

Accessibility

22. Are electronic transactions with customers used to support any of the following business functions?

Capture of information	*X*	Na
Information management	*X*	Na
Market analysis		Na
Market development		Na
Other		

23. To what extent are computer systems for transaction preparation, transaction completion and production support integrated in the firm in relation to business activities/functions regarding customers?

When transactions are carried out, DnB debit customer-accounts. However, there is no direct link to the customers' underlying accounting systems, thus the customers have to balance these systems on their own.

24. Which types of computer-mediated networks or applications are used to conduct or support which business with suppliers?

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising							
Catalogues & stock lists							
Information services							
Negotiation							
Ordering							
Billing and payment							

Finance							
Delivery							
Other							

25. How does the choice of technology relate to the type of suppliers?

26. For which business activities with suppliers has the enterprise migrated from one network or application to another? Include planned migration in this response.

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising							
Catalogues & stock lists							
Information services							
Negotiation							
Ordering							
Billing and payment							
Finance							
Delivery							
Other							

27. With reference to question 26, give the main reasons for migrating or not migrating to different technologies for business activities with suppliers.

28. Are electronic transactions with suppliers used to support any of the following business functions?

Capture of information	X	Na
Information management	X	Na
Market analysis		Na
Market development		Na
Other		

29. To what extent are computer systems for transaction preparation, transaction completion and production support integrated in the firm in relation to business activities/functions regarding suppliers?

Interview Response

I Motivation

30. What were the expectations of the firm regarding the effects of electronic commerce on the transaction process (i.e. as related to the transaction completion, transaction preparation, production support functions as described in the methodology paper)

The DnB Group appreciates the strategic opportunities and competitive advantages that are related to the use of Internet as a sales- and marketing channel. DnB is already today focusing on one-to-one marketing. Operating in the mutual funds market, where the complexity of products and services is extensive, one-on-one advisory- and communicational skills becomes more and more important. DnB sees the Internet and customized web-applications as the future in taking their strategy of direct marketing a step further.

The price setting mechanisms make it possible for Internet to become an important strategic tool regarding mutual funds exchange services. Today, prices of different funds are set once a day. If this price setting process is executed more frequently, the whole process of buying funds could change. In addition, the Internet will become a more dominant factor when mutual funds suppliers get larger margins in their pricing strategies. That is, a more differentiated price scale is likely to result in increasing importance of the Internet as part of a distribution channel.

To the extent possible, record the main features of the response to question 30 using the following table.

Core business functions	Expected effects	Anticipated benchmark and/or measurement
Advertising		
Catalogues and stock lists		
Information services	Customized information	
Negotiation		
Ordering	Efficiency, cost effectiveness, customer convenience and accessibility.	
Billing and payment		
Finance		
Delivery	Automation	
Information capture	Opportunities for segmentation	
Information management	Opportunities for segmentation	
Market analysis	Opportunities for segmentation	
Market development		

31. What were the expectations of the firm regarding the effects of electronic commerce innovations on general business processes (i.e. as related to product innovation, process innovation, relational innovation as described in the methodology paper).

The brokerage boards are to a certain degree trying to achieve customer segmentation. The Internet has the ability to support such differentiation-, customization- and segmentation strategies in a very efficient way. Still, the brokerage boards' follow-up strategies vary from customer to customer, and will not be affected by the Internet as a communication tool. Further, DnB also believes that different bundling strategies will not be affected by increasing use of online services. Each product composition is unique, and according to DnB, the Internet does not make this bundling process any easier or more efficient.

To the extent possible, record the main features of the response to question 31 using the following table.

Product innovation	**Expected effect**	**Anticipated benchmark and/or measurement**
Diversification	Increased	
Differentiation	Increased	
Customization	Increased	
Bundling	No effects	
Process innovation	**Expected effect**	**Anticipated benchmark and/or measurement**
Design		
Logistics		
Production lines	Increased	
Co-ordination	More efficient	
Relational innovation	**Expected effect**	**Anticipated benchmark and/or measurement**
Expansion		
Segmentation	Increased	
Trust		
Loyalty	Well-developed advisory services could lead to more loyal customers	

32. What were the expectations of the firm regarding the effects of electronic commerce on the business environment in the value chain (i.e. in terms of market entry and exit, market organization, supplier and customer base, etc.)

As for the dynamics of value chain environment, the Internet gives rise and support to any actors that are willing to enter the mutual funds market. If a strong actor representing the supply side enters into the market (like Fondsnett), DnB believes this will lead to a decrease in loyalty towards suppliers. This could in turn result in a possibility for new actors to gain foothold in the mutual funds market.

II Obstacles and Advantages

33. Which internal and external factors acted as obstacles and/or advantages in exploiting the potential of electronic commerce? Allow in this question for the possibility that the same factors can present both obstacles and advantages in different circumstances.

Internal factors:
When DnB started to focus on web-applications and Internet technology, the company wanted to develop its strategy and technological solutions in-house. As a consequence, the progress has been slow, and DnB are one or two steps behind the leading actors in this area. However, because of a very positive attitude regarding development of innovative Internet strategies among their company executives, DnB feel that it is possible to can catch up with the market leaders on web-based funds transactions.

Regulatory factors:
Better user interfaces, which reduce customer-made mistakes, are perceived as an important factor for reducing costs related to use of information technologies. Another aspect of such technological features is network reliability. Today, the brokerage houses have the economic responsibility for any failed or unsuccessful transactions. However, when customers carry through these transactions on their own, they will also have to accept any economic responsibility if transactions are failing or turn out to be unsuccessful. On this basis, the threshold for conducting online transactions may increase. Thus, if network stability and reliability are inadequate, the customers will not make use of the technological opportunities provided by the financial institutions, and investments in technological solutions that are made could be lost.

Strategic factors:
Those actors that start offering index management will be able to reduce their sales-costs because of less complex and highly standardized products. Such products give customers a better view of the available alternatives, thus making lock-in mechanisms less effective strategic tools. Well-developed advisory services could make up for this loss of strategic options, and lead to more loyal customers.

Public factors:
There are many obstacles associated with various intermediary roles in the mutual funds distribution channel (e.g. Fondsnett). A modification of legislation is in progress, which will remove most of the entry barriers that limit newcomers' possibilities in getting foothold in the mutual funds market today. Other changes will also be carried out within the relevant legal framework: Changes that are made render possible products like "Innskuddspensjon"; a product that, in order to be successful, has to be supported by Internet technology. There will also be changes within the legal frameworks that regulate how price setting is carried out. This will make it easier to differentiate on price, and can then be done at customer-level, in contrast to today's product differentiation. According to DnB Investor, such changes will also make it easier to offer "funds-in-fund" products.

In order to restrain whitewashing of money, starting up as a customer in the funds market means fulfilling requirements in the law, which is very strict in Norway (i.e. new customers have to legitimate themselves). By adjusting conditions for the application of "digital signatures", these requirements of the law can be eased up.

To the extent possible, encode the response to question 33 using the following table.

- factors relating to telecommunications infrastructure

Costs	Low telecom costs were a factor in the success of the electronic commerce initiative		High telecom costs inhibited the success of the electronic commerce initiative		No effects/ factor not applicable	X
Network reliability	Telecom network reliability has not been a problem	X	Poor network reliability has impeded the success of the electronic commerce initiative		No effects/ factor not applicable	
Network flexibility	The telecom operators offer a sufficient range of services to encourage and enable firms to engage in electronic commerce.	X	The telecom operators do not offer a sufficient range of services to encourage and enable firms to engage in electronic commerce		No effects/ factor not applicable	
Other						

- regulatory factors

Transaction security	Required levels of security encouraged electronic commerce		Levels of security were insufficient to encourage electronic commerce		No effects/ factor not applicable	X
Authentication and certification	Systems generated trust that encouraged electronic commerce		Systems did not generate trust and discouraged electronic commerce		No effects/ factor not applicable	X
Legal structures	Legal structures were in place to encourage electronic commerce		Legal structures were not in place an this discouraged electronic commerce		No effects/ factor not applicable	X
Protection of intellectual property	Sufficient protection encouraged electronic commerce		Weak protection of intellectual property discouraged electronic commerce		No effects/ factor not applicable	X
Other						

-internal factors

Available technology	Existing in-house technologies were sufficient to support electronic commerce		Existing in-house technologies were insufficient to support electronic commerce	X	No effects/ factor not applicable	
Skills and training	Existing staff training and skill levels were sufficient for electronic commerce		Existing staff training and skill levels were insufficient for electronic commerce		No effects/ factor not applicable	X
Costs of engaging in electronic commerce	Investment cost could easily be justified		Investment cost could not easily be justified	X	No effects/ factor not applicable	
Management attitude	Management was proactive in developing electronic commerce plans		Management was reluctant to introduce electronic commerce	X	No effects/ factor not applicable	
Other						

- external factors relating to relations with other enterprises

Human factors	Human factors encouraged the use of electronic commerce		Difficulties adjusting for human factors discouraged electronic commerce		No effects/ factor not applicable	X
Competition between transaction systems	The availability of a variety of transaction systems did not discourage electronic commerce		The availability of a variety of transaction systems discouraged electronic commerce		No effects/ factor not applicable	X
Brand image	Brand image was an asset in establishing the electronic commerce profile of the firm	**X**	Brand image problems were encountered establishing the electronic commerce profile of the firm		No effects/ factor not applicable	
Existing commercial structures	Electronic commerce encouraged more flexible commercial structures		Electronic commerce threatened to destabilize existing commercial structures		No effects/ factor not applicable	X
Other						

- strategic factors relating to competitiveness

Implementation of lock-in strategies	Electronic commerce discouraged lock-in strategies	*X*	Electronic commerce encouraged lock-in strategies		No effects/ factor not applicable	
Cost of reaching customers or suppliers	Electronic commerce decreased the cost of reaching new customers and/or suppliers		Electronic commerce increased the cost of reaching new customers and/or suppliers		No effects/ factor not applicable	*X*
Intermediation	Where required, intermediation services were easy to set up on favorable terms		Unavailability of adequate intermediation services was a problem		No effects/ factor not applicable	*X*
Management of business relationships	On balance, electronic commerce facilitated the management of business relationships		Electronic commerce made it more difficult to manage business relationships		No effects/ factor not applicable	*X*
Other						

- government policy in general

Taxation measures	Encouraged the firm to engage in electronic commerce		Did not encourage the firm to engage in electronic commerce		No effects/ factor not applicable	*X*
Financial support for R&D, diffusion or uptake	Were sufficient to encourage the firm to engage in electronic commerce		Were insufficient to encourage the firm to engage in electronic commerce		No effects/ factor not applicable	*X*
Awareness raising & demonstration programs	Contributed to the success of electronic commerce in the sector by raising the industry and public profile of electronic commerce		Government programs misrepresented the dynamics of electronic commerce and raised dubious expectations		No effects/ factor not applicable	*X*
Education system	Provided adequately trained personnel to		Did not provide adequately trained		No effects/ factor not applicable	*X*

	engage in electronic commerce		personnel to engage in electronic commerce			
Training programs	Supported the firm's capacity to engage in electronic commerce		Were not available or insufficient to support the firm		No effects/ factor not applicable	*X*
Government provision of online electronic services	Had a positive effect in drawing our customers and suppliers into the electronic commerce environment		Bad experiences with online government services made electronic commerce less attractive to our customers and suppliers		No effects/ factor not applicable	*X*
Other						

34. What is the most useful measure the government can take to stimulate the uptake of electronic commerce?

Measure 1	
Measure 2	
Measure 3	

III Impacts

35. What were the actual impacts of electronic commerce on business functions related to the transaction process (i.e. as related to transaction completion, transaction preparation, production support functions as described in the methodology paper).

To early to be measured

To the extent possible, record the main features of the response to question 35 using the following table

Core business functions	Impact	Anticipated benchmark and/or measurement
Advertising		
Catalogues and stock lists		
Information services		
Negotiation		
Ordering		
Billing and payment		
Finance		
Delivery		
Information capture		
Information management		
Market analysis		
Market development		

36. What were the actual impacts of electronic commerce innovations on general business processes (i.e. as related to product innovation, process innovation, relational innovation as described in the methodology paper).

To early to be measured

To the extent possible, record the main features of the response to question 36 using the following table

Product innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Diversification		
Differentiation		
Customization		
Bundling		
Process innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Design		
Logistics		
Production lines		
Co-ordination		
Relational innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Expansion		
Segmentation		
Trust		
Loyalty		

37. What were the actual impacts of electronic commerce on the business environment in the value chain?

New online actors are emerging. In the market for passive funds procurement*, new actors are taking a more visible position (e.g. Fondsnett.no), and the use of Internet as channel for transaction will probably lead to an exponential development of this procurement type. The reason for this assumption is that passive mutual fund procurement does not involve tight relations with the customers, thus the Internet is more suitable as a distribution channel for this procurement type. * It is common to make a distinction between *active* and *passive* procurement of mutual funds. The distinction between these to types refers to the roles that the agents possess. A passive agent does only provide the customer with information about the different financial products and suppliers, and the customer has to complete the transaction itself. In contrast, an active agent does carry through the transactions for the customer. Typically, the roles of agents are organized in accordance with this dichotomy. In Norway, Acta [www.acta.no] may serve as an example of an agent that focuses on active procurement of mutual funds, while Fondsnett [www.fondsnett.no] is an example of a passive intermediary in the mutual funds distribution channel.

38. What gains or losses in employment, turnover and profitability can be uniquely or significantly attributed to electronic commerce?

	Impact descriptions	**Evidence and/or metric**
Employment	To early to be stated	
Turnover	To early to be stated	
Profitability	To early to be stated	

Appendix B: Data Reporting Sheets – Berg Hansen Travel Agency

Background information

I Position of the firm in the value chain

1. Main product or product area of the enterprise:

Travel products (in the corporate market)

2. Status of the enterprise

Parent company of a full service travel agency enterprise

3. How many people does the enterprise employ nationally and world-wide?

People employed nationally	430	
People employed world-wide		Na

4. What are the revenues of the enterprise nationally and world-wide?

	Amount	Currency	
National revenues	1,849 million	NOK	
World-wide revenues			Na

5. How many subsidiaries does the enterprise have within the country?

Number of subsidiaries in the country	8	

6. In how many other countries does the enterprise have subsidiaries?

Number of countries	0	

7. Estimate the number of suppliers and customers with which the enterprise does business, directly or through intermediaries?

	<10	>10 but <100	>100 but <1000	>1000	
Number of suppliers				*X*	
Number of customers				*X*	

8. Estimate the number of intermediaries with which the enterprise does business, either as a purchaser or as a seller of products.

	<5	5<10	10<20	>20	
Number of intermediaries as purchasers	X				
Number of intermediaries as sellers				X	

9. Roughly estimate the percentage of the suppliers that fall into each of the following categories.

	Very small enterprises (<10)	SMEs (10<250)	Large enterprises (250<500)	Very large enterprises (>500)	Public sector bodies	Individuals	
% of total number of suppliers	0	10	20	70	0	0	

10. Roughly estimate the percentage of customers that fall into each of the following categories.

	Very small enterprises (<10)	SMEs (10<250)	Large enterprises (250<500)	Very large enterprises (>500)	Public sector bodies	Individuals	
% of total number of customers							Na

11. Estimate the percentage of suppliers and customers that are based abroad.

	<25%	25<50%	50<75%	75 to 100%	
Percentage of customers based abroad	X				
Percentage of suppliers based abroad			X		

12. Estimate the rate of exit and entry in the market.

	Rarely	Sometimes	Frequently	
Major suppliers enter and exit the market	X			
Major customers enter and exit the market	X			
Major competitors enter and exit the market		X		
Major intermediaries enter and exit the market		X		

13. What is the influence of the following actors on market structure and conditions?

	Low influence	Moderate influence	High influence	
Major suppliers			*X*	
Major customers		*X*		
Major competitors		*X*		
Major intermediaries		*X*		

II Business profile of the firm

14. Describe the relevant characteristics of the products

B-H's main product is built around a travel order, which in turn is expanded to include a wide range of supplementary services. By virtue of being a specialist in the corporate/professional market for travel services, B-H offers a *total* product. In other words, a product that exists of a whole range of different elements, acknowledging the customers' needs before, during and after their travels.

15. Describe the relevant characteristics of the transaction structure

Traditionally, B-H and other travel agencies have focused on getting customers to buy the most expensive tickets. Now, this has changed. An example of such a change in consumer focus is the manner in which B-H helps their customers signing contractual agreements with content suppliers, interacting more closely with suppliers and customers.

Automation and integration are keywords in describing B-H's business strategy. E.g., they use direct lines (EDI) to Statoil's SAP system (business amounting to approximately NOK 500 million per year). Hence, Statoil lower their travel related administrative costs while B-H uses this cooperation as a lock-in strategy. It would be quite expensive for Statoil to enter into a partnership with other travel agencies due to investments in network technology etc. By means of ICT, B-H operates closer with their customers and are able to customize services, both in content and prices/terms of delivery.

16. Describe the business structure of the firm

BH has a number of subsidiaries with a 100 percent ownership:

- *Berg-Hansen Reisebureau Oslo AS**
- *Berg-Hansen Reisebureau Stavanger AS**
- *Berg-Hansen Reisebureau Telemark AS*
- *Berg-Hansen Reisebureau Ålesund AS*
- *Berg-Hansen Bygg AS,* with the subsidiary *Ditt Eiendomsselskap AS*
- *Berg-Hansen Reisebureau Bergen AS**,* with the subsidiary *Horizont Travel AS*
- *Informa Feriesenter AS*
- *Ditt Reisebyrå AS*

* Berg Hansen Reisebureau Oslo AS, Berg Hansen Reisebureau Stavanger AS, and Berg Hansen Reisebureau Bergen AS merged with Berg-Hansen Reisebureau AS, effective 1st of January 2000. B-H does not have any subsidiaries or departments abroad.

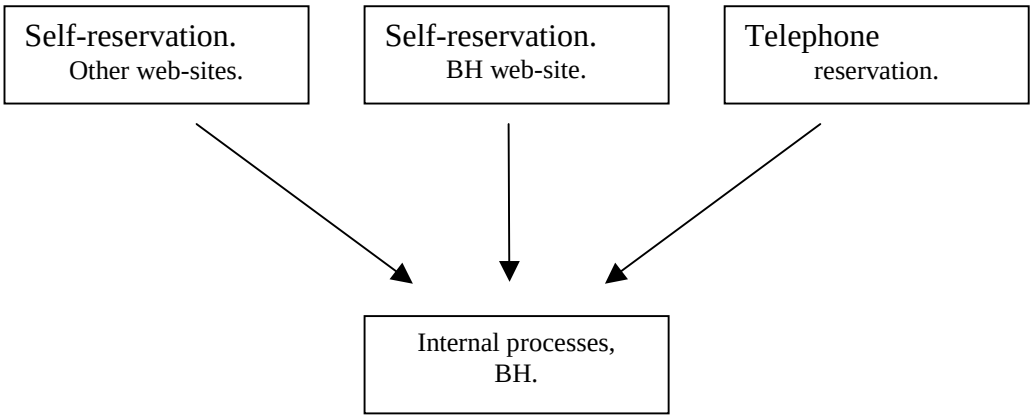

Figure: Electronic travel reservation in Berg Hansen.

B-H has tight connections with their associated company *PLUS REISER*, which is a conference-, congress- and convention organizer. PLUS is a member of *ICCA* (International Congress and Convention Association), thus giving B-H access to the international congress market. B-H is a member of *Carson Wagonlit Travel*, which is the world's largest travel agency chain. This partnership gives B-H a strengthened bargaining position facing airlines, hotels and other subcontractors. It is important for B-H to appear and operate as an objective agent in its relation with content suppliers, and their desire to promote and sell particular products. B-H also cooperates with *SMART* on an online booking service.

17. Describe the relevant production factor inputs

Information, know-how (incl. human resources), ICT

III Technology profile of the firm

18. Which types of computer-mediated networks or applications are used to conduct or support which business activities with customers?

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising					**X**	**X**	
Catalogues & stock lists							**X**
Information services				**X**	**X**		
Negotiation							
Ordering				**X**	**X**		
Billing and payment							**X**
Finance							**X**
Delivery					**X**		
Other							

19. How does the choice of technology relate to the type of customers?

Extranet (through customization of web sites) and EDI solutions developed towards large customers. For example, they have direct lines (EDI) to Statoil's SAP system. Also, B-H offers different types of electronic booking solutions well suited for the particular relationship B-H has to a customer.

20. For which business activities with customers has the enterprise migrated from one network or application to another? Include planned migration in this response. In each case, indicate by entering FROM and TO in the appropriate box.

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising					**TO**		
Catalogues & stock lists							**TO**
Information services				**TO**	**TO**		**FROM**
Negotiation							
Ordering				**TO**	**TO**		**FROM**
Billing and payment							
Finance							
Delivery					**TO**		**FROM**
Other							

21. With reference to question 20, give the main reasons for migrating or not migrating to different technologies for business activities with customers.

Using Internet technology to a greater extent, B-H is able to make use of one-to-one marketing in a more efficient way. Customization of web applications and complementary services are performed more easily, and regarded by B-H as the business areas with the highest income potential.

22. Are electronic transactions with customers used to support any of the following business functions?

Capture of information	*X*	
Information management	**X**	
Market analysis	**X**	
Market development	**X**	
Other		

23. To what extent are computer systems for transaction preparation, transaction completion and production support integrated in the firm in relation to business activities/functions regarding customers?

Through investments in new technology, B-H is able to extract valuable information from the transaction processes, which in turn is used to implement targeted marketing strategies (CRM). B-H's main goal is to build one-to-one relationships with their customers, thus removing the differences between B2B and B2C commerce. B-H refers to this as *"individualizing institutions".* Automation and integration are keywords describing B-H's business strategy. B-H offers EDI solutions to large corporate customers (cf. the Statoil example). Thus, streamlining of the most important business processes, like ordering, invoicing, payment and delivery, could be accomplished. B-H's invoicing system, called *M3*, is developed in cooperation with B-H's largest customers as well as experts in the travel industry. *M3* makes sure that specific customer requests regarding invoices are handled according to existing agreements/contracts.

24. Which types of computer-mediated networks or applications are used to conduct or support which business with suppliers?

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising							
Catalogues & stock lists							**X**
Information services				**X**			
Negotiation							
Ordering							**X**
Billing and payment							**X**
Finance							
Delivery							
Other							

25. How does the choice of technology relate to the type of suppliers?

26. For which business activities with suppliers has the enterprise migrated from one network or application to another? Include planned migration in this response.

	EDI	EDI over Internet	Videotex (Minitel)	E-mail	WWW	Extranet	Other
Advertising							
Catalogues & stock lists							
Information services							
Negotiation							
Ordering							
Billing and payment							
Finance							
Delivery							
Other							

27. With reference to question 26, give the main reasons for migrating or not migrating to different technologies for business activities with suppliers.

28. Are electronic transactions with suppliers used to support any of the following business functions?

Capture of information	*X*	
Information management	**X**	
Market analysis		Na
Market development	**X**	
Other		

29. To what extent are computer systems for transaction preparation, transaction completion and production support integrated in the firm in relation to business activities/functions regarding suppliers?

To a large extent. Almost all transactional communication with suppliers (GDSs, airlines, hotels, etc.) are carried out through the same integrated systems: *GDS* and *Switch*. B-H also cooperates with *SMART*[12] as far as services related to booking via the Internet are concerned. Through a search engine, customers get access to 480 airlines, 50,000 hotels, and 60 car rental agencies.

[12] SMART is a supplier of electronic travel services; information services, ticket reservation, and payments.

Interview response

I Motivation

30. What were the expectations of the firm regarding the effects of electronic commerce on the transaction process (i.e. as related to the transaction completion, transaction preparation, production support functions as described in the methodology paper)

Through automation and fully integrated solutions, B-H attempts to move customers towards self-service applications, thus reducing transaction costs. B-H's web sites offer services such as information about flights and prices, ticket ordering, foreign exchange quotations, and information/news from B-H's suppliers. With further technological improvements in the areas of digital signatures and secure payment solutions, B-H expects increased use of their web sites for transaction completion. B-H believes that their call center will continue to be the most important distribution channel, and that about 20 percent of those customers related to B-H through "contractual agreements", will make use of their fully integrated web services.

To the extent possible, record the main features of the response to question 30 using the following table.

Core business functions	Expected effects	Anticipated benchmark and/or measurement
Advertising	One-to-one marketing	
Catalogues and stock lists		
Information services	Customization	
Negotiation	**X**	
Ordering	Customer "self-service" applications	
Billing and payment		
Finance		
Delivery		
Information capture	**X**	
Information management		
Market analysis	**X**	
Market development	**X**	

31. What were the expectations of the firm regarding the effects of electronic commerce innovations on general business processes (i.e. as related to product innovation, process innovation, relational innovation as described in the methodology paper)

Developing customer self-service applications has high priority at B-H. As customers start to operate as their own "travel advisers", B-H will deliver their core products free of charge, focusing on developing complementary and supplementary services/products. Customization and one-to-one marketing will become more important, and B-H expects an increased focus on price, product and marketing strategies.

To the extent possible, record the main features of the response to question 31 using the following table.

Product innovation	Expected effect	Anticipated benchmark and/or measurement
Diversification	Complementary services	
Differentiation	Price and product	
Customization	One-to-one marketing strategies	
Bundling	New services	
Other	Basis for new marketing strategies	
Other	Customer "self-service" applications	
Other		
Process innovation	**Expected effect**	**Anticipated benchmark and/or measurement**
Design	Personalized web sites *("Din side")*	

Logistics		
Production lines		
Co-ordination		
Other		
Other		
Other		
Relational innovation	**Expected effect**	**Anticipated benchmark and/or measurement**
Expansion		
Segmentation	One-to-one marketing and customization	
Trust		
Loyalty		
Other		
Other		
Other		

32. What were the expectations of the firm regarding the effects of electronic commerce on the business environment in the value chain (i.e. in terms of market entry and exit, market organization, supplier and customer base, etc.)

B-H expects the value chain composition in their market to be relatively stable. Already, established actors are few, and the market is transparent. B-H believes it will stay this way. Also, new technologies have led to the emergence of new actors. B-H does not, however, expect them to be able to capture any significant market share. Mainly, they operate as specific agents/portals, and (according to B-H) have no value adding products or services to sell. All value adding transactions are mediated by actors like B-H. The "newcomers" are therefore dependent on their competitors to survive.

II Obstacles and advantages

33. Which internal and external factors acted as obstacles and/or advantages in exploiting the potential of electronic commerce? Allow in this question for the possibility that the same factors can present both obstacles and advantages in different circumstances.

Internal factors:
Costs related to technological investments are very high, which is seen as a restraining factor in exploiting the potential of e-commerce. In addition, technology also requires specialized knowledge. B-H does not regard this as a particular problem.

BH's fully integrated e-business solution has lead to an increase in the number of skills each employee must possess. Thus, the need for both skill acquisition and maintenance is more important than ever. Before B-H realized this fact, a lot of the company's expertise left because of more interesting job opportunities elsewhere (e.g. in dot-com companies). By vertically integrating transaction and business processes, they are now able to keep the expertise.

Legal/privacy issues: Through the creation of profiles etc., B-H's customers register personal information and thereby accept the terms of the use of this information. This means that legal issues related to such use are getting less complex, and that those who have a special license for using this kind of information, will lose some of their competitive advantage. B-H is one of these license owners but do not see this as a problem.

The establishment of *"Din Side"* is supposed to simplify customer tasks, and increase control over the products they are buying. Together with one-to-one marketing and customization of services, this is likely to increase loyalty and trust among B-H's customers, which again will make it more difficult for customers to end existing business relations with B-H. Finally, an important promotional factor for making e-business a priority area, is B-H management's faith in the opportunities of new technologies. In B-H, being able to carry out their e-strategy as one, vertically integrated company is perceived as a strength.

External factors:
BH holds the opinion that government should be an advisor or organizer, and not focus on regulatory aspects of e-business markets. Nor should it be concerned with active participation in e-commerce as such, e.g. by establishing portals.

To the extent possible, encode the response to question 33 using the following table.

- factors relating to telecommunications infrastructure

Costs	Low telecom costs were a factor in the success of the electronic commerce initiative		High telecom costs inhibited the success of the electronic commerce initiative		No effects/ factor not applicable	**X**
Network reliability	Telecom network reliability has not been a problem	**X**	Poor network reliability has impeded the success of the electronic commerce initiative		No effects/ factor not applicable	
Network flexibility	The telecom operators offer a sufficient range of services to encourage and enable firms to engage in electronic commerce.		The telecom operators do not offer a sufficient range of services to encourage and enable firms to engage in electronic commerce		No effects/ factor not applicable	**X**
Other						

- regulatory factors

Transaction security	Required levels of security encouraged electronic commerce	**X**	Levels of security were insufficient to encourage electronic commerce		No effects/ factor not applicable	
Authentication and certification	Systems generated trust that encouraged electronic commerce		Systems did not generate trust and discouraged electronic commerce		No effects/ factor not applicable	**X**
Legal structures	Legal structures		Legal structures		No effects/ factor not	

	were in place to encourage electronic commerce		were not in place an this discouraged electronic commerce		applicable	**X**
Protection of intellectual property	Sufficient protection encouraged electronic commerce		Weak protection of intellectual property discouraged electronic commerce		No effects/ factor not applicable	**X**
Other						

-internal factors

Available technology	Existing in-house technologies were sufficient to support electronic commerce	**X**	Existing in-house technologies were insufficient to support electronic commerce		No effects/ factor not applicable	
Skills and training	Existing staff training and skill levels were sufficient for electronic commerce	**X**	Existing staff training and skill levels were insufficient for electronic commerce		No effects/ factor not applicable	
Costs of engaging in electronic commerce	Investment cost could easily be justified		Investment cost could not easily be justified	**X**	No effects/ factor not applicable	
Management attitude	Management was proactive in developing electronic commerce plans	**X**	Management was reluctant to introduce electronic commerce		No effects/ factor not applicable	
Other						

- external factors relating to relations with other enterprises

Human factors	Human factors encouraged the use of electronic commerce	**X**	Difficulties adjusting for human factors discouraged electronic commerce		No effects/ factor not applicable	
Competition between transaction systems	The availability of a variety of transaction systems did not discourage electronic commerce	**X**	The availability of a variety of transaction systems discouraged electronic commerce		No effects/ factor not applicable	
Brand image	Brand image was an asset in establishing the electronic commerce profile of the firm		Brand image problems were encountered establishing the electronic commerce profile of the firm		No effects/ factor not applicable	**X**
Existing commercial structures	Electronic commerce encouraged more flexible commercial structures	**X**	Electronic commerce threatened to destabilize existing commercial structures		No effects/ factor not applicable	
Other						

- strategic factors relating to competitiveness

Implementation of lock-in strategies	Electronic commerce discouraged lock-in strategies		Electronic commerce encouraged lock-in strategies	**X**	No effects/ factor not applicable	
Cost of reaching customers or suppliers	Electronic commerce decreased the cost of reaching new customers and/or suppliers		Electronic commerce increased the cost of reaching new customers and/or suppliers		No effects/ factor not applicable	**X**
Intermediation	Where required, intermediation services were easy to set up on favorable terms		Unavailability of adequate intermediation services was a problem		No effects/ factor not applicable	**X**
Management of business relationships	On balance, electronic commerce facilitated the management of business relationships	**X**	Electronic commerce made it more difficult to manage business relationships		No effects/ factor not applicable	
Other						

- government policy in general

Taxation measures	Encouraged the firm to engage in electronic commerce		Did not encourage the firm to engage in electronic commerce		No effects/ factor not applicable	**X**
Financial support for R&D, diffusion or uptake	Were sufficient to encourage the firm to engage in electronic commerce		Were insufficient to encourage the firm to engage in electronic commerce		No effects/ factor not applicable	**X**
Awareness raising & demonstration programs	Contributed to the success of electronic commerce in the sector by raising the industry and public profile of electronic commerce		Government programs misrepresented the dynamics of electronic commerce and raised dubious expectations		No effects/ factor not applicable	**X**
Education system	Provided adequately trained personnel to engage in electronic commerce		Did not provide adequately trained personnel to engage in electronic commerce		No effects/ factor not applicable	**X**
Training programs	Supported the firm's capacity to engage in electronic commerce		Were not available or insufficient to support the firm		No effects/ factor not applicable	**X**
Government provision of online electronic services	Had a positive effect in drawing our customers and suppliers into the electronic commerce environment		Bad experiences with online government services made electronic commerce less attractive to our customers and suppliers		No effects/ factor not applicable	**X**
Other						

34. What is the most useful measure the government can take to stimulate the uptake of electronic commerce?

Measure 1	Operate as an advisor and/or organizer of electronic markets
Measure 2	Keep away from purely regulatory measures
Measure 3	Should not engage actively in commercial initiatives, such as portals

III Impacts

35. What were the actual impacts of electronic commerce on business functions related to the transaction process (i.e. as related to transaction completion, transaction preparation, production support functions as described in the methodology paper).

The most important impacts of e-commerce are on business functions related to transaction processes, on automation of all service processes, and on (the reduction of) administrative costs. B-H has cut their administrative costs by 20 man-years due to process automation.

To the extent possible, record the main features of the response to question 35 using the following table

Core business functions	Impact	Anticipated benchmark and/or measurement
Advertising	Customization	
Catalogues and stock lists		
Information services	Customization	
Negotiation		
Ordering	Customer self-service/Automation	
Billing and payment	Customer self-service/Automation	
Finance		
Delivery		
Information capture	Easier	
Information management	More flexible	
Market analysis	Used more easily and strategically	
Market development	Segmentation and diversification	

36. What were the actual impacts of electronic commerce innovations on general business processes (i.e. as related to product innovation, process innovation, relational innovation as described in the methodology paper).

As far as general business processes are concerned, e-commerce innovations have lead to the development of *supplementary* services, which in the future will represent the larger part of B-H's income. The customers will carry out most of the tasks related to ordering B-H's core products. B-H states that they will not charge their customers for services which are fully handled by the customers themselves. This in turn leads to a more extensive differentiation strategy on price, product and marketing.

To the extent possible, record the main features of the response to question 36 using the following table

Product innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Diversification	New supplementary services/products	
Differentiation	On price and general terms of purchase	
Customization	One-to-one marketing	
Bundling		
Process innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Design	Customization	
Logistics	More flexible	
Production lines	More flexible	
Co-ordination	More flexible	
Relational innovation	**Impact descriptions**	**Anticipated benchmark and/or measurement**
Expansion	Through cooperation with on-line content providers	
Segmentation	Customer needs and habits	
Trust		
Loyalty		

37. What were the actual impacts of electronic commerce on the business environment in the value chain?

The value chain impacts of e-commerce are moderate. However, quite a few new actors, who specialize on specific parts of travel services, operate in the market as a consequence of the opportunities brought about by the Internet. According to B-H, however, the industry's value chain structure will not undergo any major changes. The market will remain quite stable.

B-H has gained a lot of new customers over the last year or so, and their annual turnover has increased. This development occurred after B-H's investments in technology (ICT), and after the implementation of their e-business strategy. Still, it is impossible to prove any cause-effect relationships. That is, it is difficult to separate the effects of e-business from the effects of other factors.

38. What gains or losses in employment, turnover and profitability can be uniquely or significantly attributed to electronic commerce?

	Impact descriptions	**Evidence and/or metric**
Employment	Reduced administrative costs by 20 man-years, due to process automation.	
Turnover		
Profitability		