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Strategic Control Information in Airline Route Decision

ABSTRACT

The purpose of this study is to analyze how airline companies use their management control systems in order to gain a sustainable competitive advantage in a situation of environmental change resulting from economic deregulation. Therefore, a model of strategic control information will be developed.

The research is a case study on Finnair, the Finnish national carrier. The study describes how the company prepared for deregulation by adapting its strategies, organization structure and management control systems. The strategic control information in a route decision was investigated. Producing planning and control information for strategic decision making was mainly based on traditional methods, and the control systems did not generate a great deal of information in accordance with the theoretical model of strategic control information. Nevertheless, strategic viewpoints were taken into account in management decision making, in spite of the shortcomings of the control system. Moreover, the company has gradually begun to adjust its competitive strategy and organizational structure to the deregulated environment. The paper argues that a strategic cost management framework will give companies new cost management tools.

Keywords: *Management control systems, competitive strategies, sustainable competitive advantage, deregulation*

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1 INTRODUCTION

In recent years, researchers have become increasingly interested in deregulation. Deregulation in the airline industry has received particular attention. It has been argued that airlines have to improve efficiency and profitability to maintain their competitive positions because deregulation has dynamized the environment. The decisions faced by companies have become more complex, and there is a need for more timely and accurate information than before. Knowledge of the effects of deregulation is of great importance to airline managers in particular, since companies have to redesign their control systems and supporting accounting systems to be able to get better information for cost control and performance measurement purposes.

Most research in the field, however, focuses on the economic effects of deregulation. The general limitation in existing research is that it does not consider the management accounting aspects of deregulation. Changes in competition have placed significant strains on company strategies, internal organization and management control systems. Management accounting has an ever-increasing role in assisting decision making, as more information is required about competitors, and demand factors and strategic uncertainties have to be identified as soon as possible.

The purpose of the present paper is to analyze how airline companies use their management control systems in order to gain a sustainable competitive advantage in a situation of environmental change resulting from economic deregulation. Moreover, the paper aims to find out the distinct characteristics of strategic control information in the service sector. The paper reports on the results obtained from a case study within Finnair, the Finnish national carrier.

The study is organized as follows. First, Section 2 discusses previous research. Section 3 focuses on factors affecting strategic control information, defines the main concepts, and explains the information requirements at the different phases of a decision process. Section 4 reports on the results for the empirical case study, and finally, in Section 5, conclusions are drawn and discussed.

2 EARLIER RESEARCH ON MANAGEMENT CONTROL SYSTEMS AND COMPETITIVE STRATEGY

Since the 1970's, a great many management accounting studies on control systems and strategy have relied on the research tradition based on organization theory. In that tradition accounting procedures have been examined in a particular organizational setting. It is another important characteristic of this research tradition that emphasis is put on the process of dynamic change in accounting systems.

Contingency theory became popular in management accounting research in the mid 1970's. This theory holds that there is no universal control system applicable to all organizations and under all circumstances. The choice of an appropriate control system is always contingent on the special characteristics of the organization and its environment. According to Otley (1980), the control system is conditioned by production technology, environment and organizational structure. Other determinants of the control system have been proposed: size of the organization (Bruns & Waterhouse 1975, Merchant 1981), strategy (Khandwalla 1972, Govindarajan & Gupta 1985, Merchant 1985, Simons 1987), and the decision making style of management (Gordon & Miller 1976). It is characteristic of efficient organizations that they can align the control information they gather to the particular contingency factors.

Numerous studies have addressed change processes in organizations. On the one hand, a variety of strategic decision processes and, on the other hand, strategic reorientation and strategic changes have been analyzed. These process studies emphasize the dynamic interaction between the management control systems, strategy and sustainability of the firm's competitive advantage (e.g. Simons 1990, 1991, 1995).

Criticizing the procedures of traditional management accounting, Johnson & Kaplan (1987) and Cooper & Kaplan (1991), suggested new methods (e.g. activity-based costing ABC, life cycle costing, target costing, competitor data analysis), the application of which would render management accounting information instrumental to strategic positioning decisions. Accounting for strategic positioning consists of accounting information designed to enable top management to attain and sustain a strategic position in the marketplace vis-à-vis competitors (Roslender 1995, 1996).

On the basis of Johnson's and Kaplan's seminal work, broader theory frameworks have been put forward, which emphasize the role of management accounting in the strategic management process. An examination of control systems in their strategic contexts led to the establishment of strategic management accounting (SMA). Strategic management accounting assists managers' strategic decision making by generating information relevant to competitive strategies. So far, most of the research consists of conceptual theorizing (e.g. Simmonds 1981, 1986, Shank & Govindarajan 1989, 1992, 1993, Bromwich 1990, Bromwich & Bhimani 1994, Ward 1992). In contrast, there has been little empirical research in strategic management accounting. Competitor accounting, customer account profitability and benchmarking are examples of new empirical management accounting methods (Ward 1992).

The latest trend in accounting for strategic positioning is the quest for continuous improvement. Continuous improvement refers to product quality and operating performance. One applicable method in this respect is the Balanced Scorecard framework by Kaplan and Norton

(1992). The Balanced Scorecard integrates financial and non-financial performance measures generated internally and externally (Roslender 1995).

3 THEORETICAL MODEL OF STRATEGIC CONTROL INFORMATION

The basis of strategic control information

Traditionally, management accounting has concentrated on cost accounting and performance measurement of a company over a short period (Johnson & Kaplan 1987, Drury 1996, 22). In contrast, in strategic management accounting, a different viewpoint is introduced. The function of strategic management accounting information is to contribute to the long-term goals of the company (e.g. Ward 1992, 3,15, Shank & Govindarajan 1989, 1993). Therefore, the period of performance measurement has to be longer than one year.

Additionally, management control systems have until very recently concentrated on generating internal organizational information. However, facing increasing uncertainty firms have found it more expedient to scan their environment. Environmental changes, e.g. increasing and globalizing competition due to deregulation, have underlined the need for strategic management accounting.

As a result of deregulation, companies face the need to readjust the set of competition parameters they rely on (Cunningham 1990, 1992). For this purpose, they have put increased emphasis on market-oriented information about their competitive market position. To gain a sustainable competitive advantage, companies have to adjust their control systems and organization structures to their competitive strategies. An efficient management control system generates both financial and non-financial information about competitors and customers (Shank & Govindarajan 1993).

Strategic management accounting has been simultaneously developed in the United States and in Great Britain. In the United States, Shank and Govindarajan (1989, 1992, 1993) introduced strategic cost management (SCM), which is based on Porter's (1980, 1985) competitive strategies, competitive advantage and value chain analysis. Every strategic business unit of a company can create value to its customers by product differentiation or by a cost leadership strategy.

Additionally, in the United States Robert Simons has studied the relationship between accounting control systems and business strategies. In his contingency-theoretical study (1987) he found that firms following different strategies employ accounting control systems in different ways. In his case study (1990) Simons developed a dynamic process model to show how top managers use formal systems to direct the emergence of new strategies and to ensure a sustainable competitive advantage. The strategy of the firm determines the kind of uncertainty

which could be critical to the achievement of the firm's chosen objectives. Top managers collect information about strategic uncertainties by interactive control systems. Strategic uncertainties are likely to change as the competitive environment changes.

In his later case studies (1991, 1992, 1994, 1995) Simons extended his process model. He has investigated, how accounting information assists in formulating and implementing business strategy, and how top managers use control systems to drive strategic renewal. In his theoretical framework he formed four control system categories: belief systems, boundary systems, diagnostic control systems and interactive control systems. Managers apply each system in different ways and for different purposes.

In Great Britain, strategic management accounting has been investigated mainly by Simmonds and Bromwich. Simmonds (1981, 1986) has introduced strategic performance indicators. In addition, he has emphasized the relative nature of strategic information. Benchmarking information has to be collected especially on competitors.

Bromwich (1990) gave strategic cost accounting a customer focus. He created a product attribute theory which gives support to Porter's differentiation strategy. On the basis of the theory, companies have to evaluate product characteristics from the customer's point of view. The costs of the attributes provided by the company's products are essential to the sustainability of the company's product strategies.

In addition, Bromwich based his arguments on contestability theory. Contestability theory was developed by Baumol and Willig (1981) and Baumol, Panzar and Willig (1982, 1986). The theory of contestable markets presents the conditions for a firm's price and output strategy to be sustainable in the face of potential competition. Contestability theory states that companies should have sustainable cost advantages over the rivals, if their strategies are sustainable. Contestability theory contributes to Porter's cost leadership strategy.

On the basis of previous strategic management accounting literature, strategic control information can be described by the following characteristics:

- it supports the formulation of a competitive strategy and controls the achievement of strategic objectives;
- it is used at every stage of a strategic decision making process: in planning, implementation and control;
- market-oriented external information is obtained; and
- long-run information is gathered to satisfy a company's strategic objectives and to achieve a sustainable competitive advantage.

In this study, strategic control information is defined as the information generated by management control systems to assist the management at all stages of a strategic decision process, and

which emphasizes long-run external information. In this study, control information is focused exclusively on output controls; behavior controls are excluded.

Formation of the model of strategic control information

The characteristics of strategic control information being presented, it is appropriate to consider the information management needs at different stages of a strategic decision process¹.

First, as competitive strategies are formulated, requisite background information, on the one hand, concerns the internal resources of the company and, on the other hand, the environment. Internal and external background information supports all stages of a strategic decision process. On the basis of the SWOT framework (strengths, weaknesses, opportunities, threats), the internal resources of a firm refer to strengths and weaknesses, while the external environment creates opportunities and threats (e.g. Ansoff 1980, Johnson & Scholes 1993).

Internal resources of a company consist of, for example technology, cost structure, equipment and other tangible assets, financial, staff and intangible resources. Those particular strengths which give the company an edge over its competitors are core competencies (Johnson & Scholes 1993, 151). In particular, production technology and cost structure are dependent on the industry. They determine which costs are critical for the success of the company, and what kind of information assisting planning and control the management needs when defining strategic objectives (Shank & Govindarajan 1993, 232–234).

The environment of the firm consists of competitors, customers, suppliers, competitive authorities and labour markets etc. According to contingency theory, the degree of uncertainty in the environment determines what kind of competitive strategy, organization structure and control information is needed. A hierarchical organization structure and centralized control have been found applicable to a stable environment, whereas in a dynamic and turbulent environment organizational flexibility, decentralized control and matrix organization seem to be more appropriate (Mahon & Murray 1981, Zajac & Shortell 1989). When the environment is uncertain, a long-range view of planning is more important than in a stable environment (Shank & Govindarajan 1993, 97).

As deregulation has dynamized the environment in many industries, external information, especially about competitors, has become increasingly important. There are various alternative ways of investigating the characteristics of competition: i) Porter (1980, 1985) has analyzed the structural competitive forces and strategic groups in an industry, ii) in industrial organization theory, a structure – conduct – performance (SCP) paradigm has been introduced

¹ Strategic decision process classifications have been presented e.g. by Simon 1960, Minzberg, Raisinghani & Theoret 1976 and Drury 1996, 9.

(see e.g. Scherer & Ross 1990, 4–5), and iii) contestability theory explains entry and exit barriers in an industry². Structural information about the characteristics of competition in an industry assists a company in strategy formulation and strategic positioning.

Second, after collecting and analyzing the background information about internal resources and the environment, formation of a value chain assists strategic positioning of the firm (Horn-gren et al. 1994, Bromwich & Bhimani 1994, Shank & Govindarajan 1992, 1993, Johnson & Scholes 1993). The value chain for any firm in any business is the linked set of value-creating activities (Shank & Govindarajan 1993, 13). Value chain indicates differences among firms in the industry, and thereby helps the firm to define its strategic position compared with the competitors.

Next, in order to assist strategic decision making, it is important to identify cost drivers at the key value chain stages (Shank & Govindarajan 1993, 90–91). Strategic cost drivers determine the long-run cost position of a company. They explain the differences that exist in unit costs across companies in the same industry (Siau & Van Lindt 1997). Two categories of strategic cost drivers have been presented. First, structural drivers, which involve choices regarding the economic structure of the company, consist of scale, scope, experience, technology and complexity. Second, executional drivers are determined by managerial ability and performance. They include factors such as capacity utilization, plant layout efficiency, product configuration, work force involvement and quality of management (Shank & Govindarajan 1993, 21–22, Siau & Van Lindt 1997).

Further, as the aim of strategic control information is to gain competitive advantage, both planning and control information should support competitive strategy and measure the achievement of strategic objectives. Principally, a sustainable competitive advantage can be built by two alternative strategies: cost leadership or differentiation. It is also possible for a firm to follow a focus strategy either by lowering costs or by offering superior products on a narrow segment of an industry.

Strategic decisions based on different competitive strategies demand distinct planning and control information (see e.g. Bromwich 1990, Shank & Govindarajan 1993). At the planning stage, to support searching for alternative action models, data gathering and choice making, a firm following the differentiation strategy needs to estimate the market demand for the product being offered and changes in competitors' strategies. Instead, information about the most efficient and lowest cost technology, the average cost structure of the industry and about the costs of the main competitors is important for firms following a cost leadership strategy. Further-

² According to Baumol & Willig (1981, 407) "an entry barrier is anything that requires an expenditure by a new entrant into an industry, but that imposes no equivalent costs upon an incumbent".

more, as many barriers to entry arise from cost advantages, information about the sources of barriers to entry in the industry is needed (Bromwich 1990).

At the control stage, a strategic view of the control process emphasizes information about the achievement of a sustainable competitive advantage (Rickwood et al. 1990, Moon & Bates 1993, Shank & Govindarajan 1993, 110). The indicators of performance measurement should not contradict the organization's objectives set at the planning stage. Performance measures increasingly focus on reducing the total costs of the company at all stages of the value chain. In addition, organization structure has to be conducive to the achievement of strategic objectives. A philosophy of continuous improvement assists companies to compete successfully, as employees at all levels in the organization know how they can contribute to improving their performance (e.g. Kaplan & Norton 1992).

To conclude, the model of strategic control information can be summarized in the following manner in Figure 1.

In broad outline, the model of strategic control information is uniform irrespective of the industry or competitive environment of the company. The next two sections examine the effects of economic deregulation and the service industry characteristics on the model.

Effects of economic deregulation on strategic control information

Natural monopoly in an industry has been a traditional reason for economic regulation. In this case, there are economies of scale in the industry, and unit costs of production are the smallest if only one company operates in the market (e.g. Baumol et al. 1977, 350). In such industries price regulation has been argued to protect consumers, because monopoly companies can charge higher prices and produce less than optimal in competitive markets owing to their monopoly positions (Joskow & Rose 1989, 1453–1455, Phillips 1990).

In addition, some industries with several incumbent firms have also been regulated. Regulation has been based on a threat that without regulation destructive competition would lead to imbalance in the market and to discrimination of customers (Joskow & Rose 1989, 1453–1455).

Since the 1960's, the traditional theory of regulation has been criticized (Stigler 1971, Posner 1974, Peltzman 1976). Instead, interest group theories have been presented. According to these theories, different interest groups lobby for their own interests through regulation. Entry barriers, for example, can be erected by incumbent firms through licence requirements (Joskow & Rose 1989, Spulber 1989, 31).

In recent research (e.g. Braeutigam 1989, 1307), the need for regulation has been questioned. The existence of natural monopoly is not necessarily a sufficient basis for regulation, because a threat of entry may be real even though there is no actual competition in the mar-

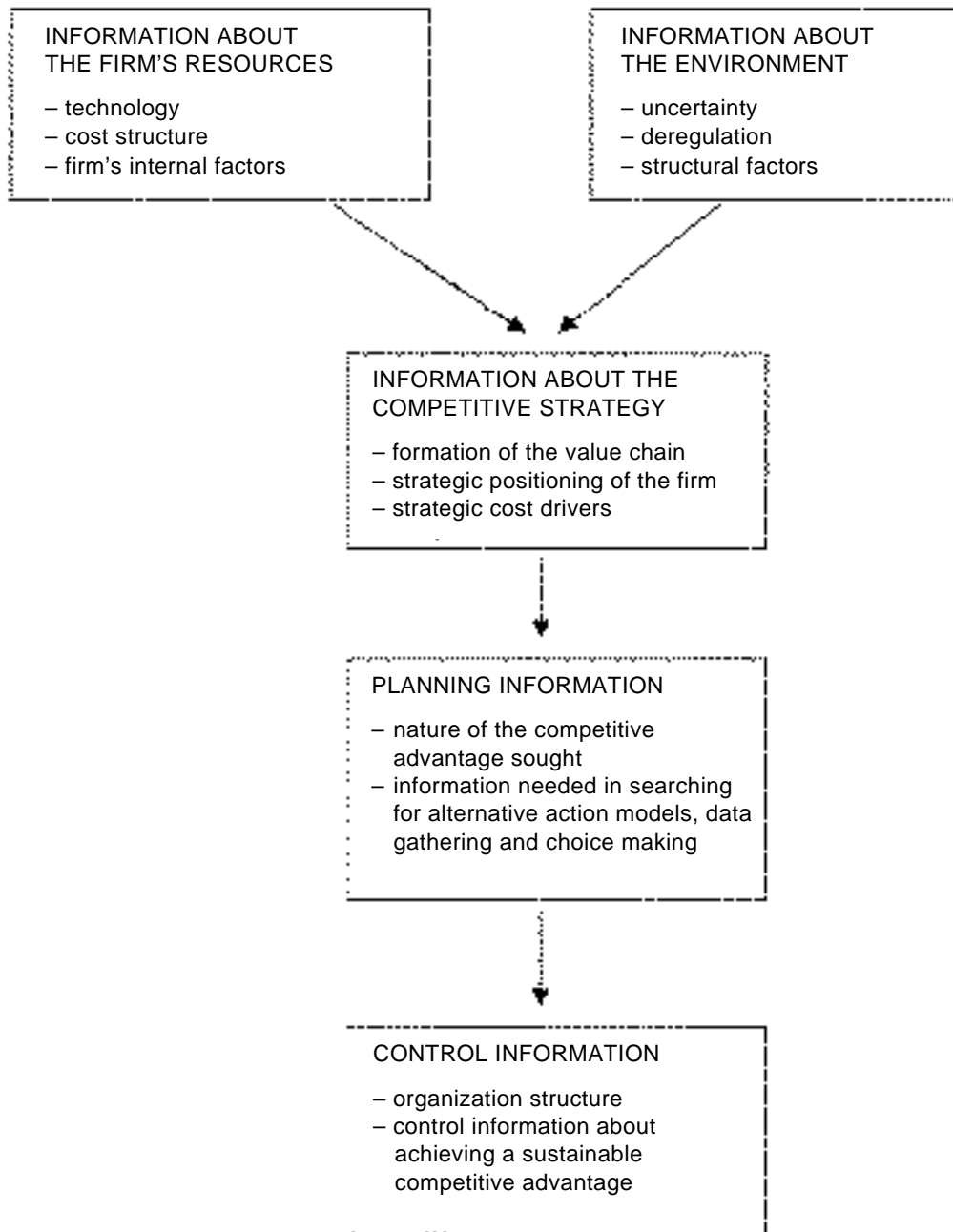


FIGURE 1. Model of strategic control information.

ket. In the theory of contestable markets, a contestable market is defined as one in which there are no sunk costs³ and artificial entry barriers. In such markets, entry and exit are feasible without costs and any other barriers. In that case, there is no need for government intervention to achieve economic efficiency. Deregulation has also had harmful effects from the customer's point of view. Consequently, economic regulation has been abolished in many countries during the past two centuries.

Traditionally, traffic industries have been heavily regulated in most countries. Therefore, many studies have been made on the effects of deregulation, for instance in airline⁴ and trucking industries. Most of these studies apply the industrial organization structure – conduct – performance paradigm or contestability theory, examining the effects of deregulation mainly from consumers' point of view. These studies indicate that in most cases deregulation is increasing welfare. These welfare effects are internationally generalizable.

Strategy researches (e.g. Mahon & Murray 1980, 1981, Smith & Grimm 1987, Corsi & Grimm 1989, Corsi et al. 1991, 1992, Reger & Duhaime & Stimpert 1992, Grimm et al. 1993 and Ramaswamy & Thomas & Litschert 1994) have investigated how organizations have adapted to environmental changes. As economic deregulation may mean a considerable change in the industry environment, it makes demands on the competitive strategies and control systems of companies. Increasing competition caused by deregulation makes the environment uncertain and turbulent. Consequently, competitive strategies have to be modified in order to render them compatible with the changing environment. Usually, companies in the regulated industry have insufficient incentives to develop their competitive strategies, as the linkages between competitive strategies and performance are loose. Therefore, companies are not sufficiently rewarded for carrying on a successful competitive strategy (Snow & Hrebiniak 1980, Mahon & Murray 1981, Smith & Grimm 1987).

In management accounting, only a few studies have been carried out on the effects of deregulation on management planning and control systems (e.g. Khandwalla 1972, Cunningham 1990, 1992, Simons 1991, Banker & Johnston 1993). On the basis of those studies, linking up performance measures with competitive strategy is a prerequisite for successfully im-

3 Sunk costs in economics are costs which cannot be recouped in the market, i.e. where the factors or resources to which sunk costs relate have little or no opportunity cost in the market. Sunk costs of this type are argued to constitute barriers to entry (Bromwich 1990). The economic concept of sunk costs differs from that used in management accounting where sunk costs are costs that have been created by a decision made in the past and that cannot be changed by any decision that will be made in the future. In management accounting sunk costs are irrelevant for decision-making (Drury 1996, 44).

4 In the United States e.g. Bailey & Panzar 1981, Bailey & Friedlaender 1982, Graham et al. 1983, Bailey et al. 1985, Call & Keeler 1985, Moore 1986, Levine 1987, Morrison & Winston 1986, 1989, Borenstein 1989 and Brueckner & Spiller 1994, and in Europe e.g. McGowan & Seabright 1989, Button & Swann 1989, Abbott & Thompson 1991, Cronshaw & Thompson 1991, Encaoua 1991, Doganis 1991.

plementing strategic plans. An efficient exploitation of resources is especially important for firms aiming at competitive advantage based on the lowest costs. Measurements of quality, flexibility and innovations are requirements for firms following a differentiation strategy. Non-financial measures are in most cases combined with strategy more easily than financial measures, and they measure long-run performance (Gordon & Narayanan 1984, Simons 1987, Govindarajan & Shank 1992, Den Hertog & Roberts 1992, Schefczyk 1993). In the long run, it is important to recognize how the strategic position of the firm has changed. Thus, there is a need for benchmarking information about the competitors and the industry (Shank & Govindarajan 1993, 111,119).

In industries where government regulation has been heavy, regulatory requirements have controlled the characteristics of cost accounting systems. Systems theoretic research has suggested that in a turbulent and competitive environment systems normally adapt by increasing internal variety, relationships and information. In those circumstances, information about markets is especially important for decision-making (Emery & Trist 1965). According to Cunningham (1990, 1992), in a competitive environment the interaction between accounting and marketing functions has become closer than before deregulation. In a competitive environment, especially marketing considerations affect the characteristics of cost accounting systems. Additionally, Bromwich (1990) argued that market orientation demands an organization structure where accounting and financial operations are in keen contact with other functions.

There are different views of the connections between environmental uncertainty and organizational structure. Environmental uncertainty has been suggested to demand decentralized organizational structure (Burns & Stalker 1961, Thompson 1967). By contrast, in their contingency-theoretical study, Waterhouse and Tiessen (1978, 69) found that organizations always aim at a focused structure. This view is supported by Cunningham (1992), who found that organizational structures of traffic companies remained focused even after deregulation.

Strategic control information in the service sector

Companies operating in the service sector have some distinct characteristics compared with manufacturing organizations⁵. In this study, these features are supposed to affect the information management needs for strategic control in service business companies.

Services are usually produced in the presence of the customer. It is therefore essential, especially for service companies, to gather information about the customers' needs at each stage of the service process. During the last few years, the frequency of customer-driven or-

⁵ Grönroos 1982, 1990a, 1990b, Lovelock 1983, Fitzgerald et al. 1989, Brignall et al. 1991a, 1991b, Silvestro et al. 1992.

ganizations has increased in the service sector (Grönroos 1982, Bromwich & Bhimani 1994, Horngren et al. 1994).

Customers' expectations are usually heterogeneous. Therefore, service companies often seek competitive advantage by the differentiation of services. As customers use to a different extent support services that bring about fixed costs (Rotch 1990, Cooper & Kaplan 1991, 467), a cost accounting system calculating costs and profitability by a customer or a customer segment would assist the management in decision-making. It is important for service companies to control excess capacity and the resulting costs, since unanticipated demand cannot be stabilized by the volume of inventories (Rotch 1990).

The quality of services is difficult to measure with standards set in advance. Financial performance measures may lead the management to emphasize short-run profitability instead of long-run performance. Therefore, in the service sector, non-financial measures are often more appropriate for measuring long-run performance than financial measures are (Fitzgerald et al. 1989).

Organizational structure emphasizing the customer focus is applicable to service companies. On the basis of several studies (e.g. Grönroos 1990a, 1990b, Bowen & Schneider 1988), decentralized organizational structure is most appropriate. In particular, operational decision-making should be decentralized as close to the customer level as possible.

4 CASE AIR TRAFFIC

Research method

A single case study approach was chosen as the research method of the empirical study. The strategic control information in a route decision of an airline was examined. The strategic decision of the case company was analyzed employing the theoretical model developed in Section 3.

A case study approach was chosen in order to understand the effects of deregulation on management control systems in a particular organizational setting. The strength of the case study method is to gain a deep understanding of organizational practices. It is possible because the study focuses on real processes in organizations, and because the researcher is in direct contact with organizational participants by interviews and by direct observations of activities (McKinnon 1988). Case studies rely on analytical, not statistical generalization. The objective of analytical generalization is to generalize back to theory, and not to draw inferences to some larger population (Yin 1989, Scapens 1990, Ferreira & Merchant 1992, Spicer 1992).

It was imperative to the research tasks assumed to focus on a case company that operates in a service industry undergoing a significant environmental change. Finnair, the national air

carrier, is a service company that operates in such an environment. It is the case company of the study. The case route was chosen for the study because Finnair had established it in anticipation of the environmental change emanating from the deregulation of the airline industry. The new route Helsinki – Düsseldorf – Barcelona was established by Finnair, because the deregulation of European air traffic permitted to operate route traffic between two foreign countries. The case company objectives of the route decision, competitive advantage gained, and planning and control information used at every stage of the decision making process were studied.

Triangulation was sought in data collection. Therefore, multiple sources of data were used to achieve validity and reliability (McKinnon 1988, Yin 1989). Primarily, the study's empirical material was gathered by semi-structured interviews at the case company. A total of 14 interviews were conducted, the average interview lasting about two hours. The interviews were not taped, but the notes were transcribed immediately after each interview. The persons interviewed at the case company were employed in various divisions and on various organizational levels of the company. For example, the Executive Vice President of the marketing division, the directors of finance and international relations, and the managers of budgeting and cost accounting, marketing services and route planning were interviewed. The interviews were conducted within a two-year period, from February 1993 to February 1995. The long interview period was instrumental for the study, because at the empirical research stage the theoretical framework of the study was gradually specified as an interactive process.

Additionally, in order to get information about the deregulation measures in air traffic, two Civil Aviation Administration authorities and the Special Councillor in the Ministry of Transport and Communications in Finland were interviewed.

Furthermore, a great deal of public information about the airline industry and about the case company was collected. Familiarity with the airline industry was essential for the study, as strategic control information is market-oriented, and there are many special characteristics in air traffic. Information was obtained from books, journals, newspapers, annual reports and other publications.

A description of the case company

Finnair was established in 1923, and it is the sixth oldest scheduled airline in the world. The four main sectors of the company are flight operations, travel agencies, tour operations, and hotel and restaurant operations. Flight operations constitute about 80 % of the net sales of the company. All the operations are closely connected with marketing the services of the parent company and producing support services for flight operations. State ownership of the case company has gradually been reduced. At the end of March 1996, the Finnish State owned 60.7 % of the company's shares.

The case company is an international medium-sized airline. In 1995/1996, the consolidated net sales amounted to FIM 7,182 million and the company employed about 10,000 people. The net profit for the accounting period 1995/1996 was FIM 372 million. The flight operations are focused in international route traffic, consisting mainly of European traffic. In 1995/1996, the share of international route traffic was approximately 70% of air transport revenues.

Previously, Finnair's cost level has been quite high compared with other European airlines, but its costs have gradually been cut down, being today below the average level of European airlines (Expanding Horizons 1994). Personnel costs, constituting one third of the total costs of the company, are the largest cost item. Additionally, the largest cost items consist of fuel purchases for flight operations, purchases of materials and supplies for passenger services, and ground service costs.

Air traffic is a very capital-intensive industry, and during the last few decades there have been rapid innovations in aviation technology. Therefore, airlines need to finance major capital investments. In 1996, Finnair decided to modernize its holiday traffic fleet, and a new aircraft family for European traffic has quite recently been chosen.

During the last few years, the organizational structure of Finnair has often been changed. At the beginning of the 1990's, the organization was decentralized but, a few years later, increasing competition led to a centralization of the organizational structure again. In 1990, the separate group management was suppressed and three operational groups: a flight operations group, a technical group and a commercial group were formed of the prior seven departments of the parent company. The commercial group was divided into four route sectors responsible for their results. In 1992, the Supervisory Board of Finnair decided to change the organizational structure in order to improve the market position of the company, to increase the efficiency of planning operations and to reduce organizational levels. The four route sectors at the commercial department were united into two groups: Finnair North and Finnair International.

In order to improve the profitability of the company a strategic action programme was approved by the Supervisory Board of Finnair in February 1993. Thereafter, further organizational restructuring actions have been implemented, and the number of employees has been reduced. In April 1993, Finnair North and Finnair International were united into a Marketing Group. The Marketing Group was made responsible for marketing functions, traffic planning and route profitability.

In November 1993, an extraordinary general meeting approved an Amendment to the Articles of Association in order to increase the authority of the Board of Directors, and correspondingly reduce the authority of the Supervisory Board. In April 1994, a new administrative body, the internal Board of Management, was formed to replace the prior Management Group. The members of the body are appointed by the Board of Directors.

Thereafter, further organizational changes have been implemented in the Group structure. During the financial year 1995/1996, a single administrative unit, Finnair Travel Service, was established in order to eliminate overlapping in package tours, and Finnair's ten travel agencies operating abroad were combined into a single organization called Norvista. In addition, the subsidiary companies Finnaviation and Karair were merged with the parent company in 1996. The financial management functions of the subsidiaries were integrated and a common accounting system was introduced.

The planning system of the company is decentralized. Thus, planning operations are performed separately at the marketing department, the technical department and the operational department. Calculations for route planning are made at the marketing department. The company has regarded the lack of a long-term and extensive traffic planning system as a problem. The budgeting process is entrusted to the financing department, but the budget proposals concerning personnel, expenses and investments are made by the functional groups. Budget objectives are defined and their achievement is controlled by the Board of Directors. The objectives are tight and the budget cannot be revised during the year.

In the 1990's, the control system of the company has been under a development process. According to the interviews at the financing department, the objective of the reform has been to increase the flexibility and diversity of the reporting and the performance measurement systems. The reform aims at reducing the amount of information the top management has to deal with. Therefore, the control system will be coordinated so that top management receives only the most important information. Furthermore, the management group has been trained in activity-based management, and a few experimental activity-based costing projects have been carried out in the case company.

Starting from the spring of 1997, a new action programme has been prepared in order to improve the structural profitability of the company by FIM 500 million by the end of 1999. The objective of the programme is to attain sustainable structural changes by increasing revenues and cutting costs, since in the competitive markets the company has to be agile and capable of quickly reacting to environmental changes. Thus, work processes have to be reorganized and co-operation has to be increased. In addition, the company has invested heavily in its service concept. The company aims at becoming the best European airline measured by punctuality.

The airline industry environment

At the moment, European airlines are undergoing a process of radical change. On the one hand, deregulation has increased competition and the environment has turned dynamic and turbulent. On the other hand, the economic recession reduced demand for air traffic at the

beginning of the 1990's. However, in the middle of the decade demand started to recover and the profitability of European airlines has improved.

International air traffic has traditionally been regulated by a group of bilateral and multi-lateral agreements and by the rules of the International Air Transport Association (IATA). The regulations have affected entry to routes, capacity and fares. The basis of these regulations is the Chicago Convention concluded in 1944, which covers both regular route traffic and irregular charter traffic.

In the 1980's, the provisions of bilateral agreements were loosened in the European air traffic. At the same time, the European Commission has gradually liberalized air traffic regulations. The first liberalization package was accepted in December 1987. The second package was accepted in June 1990, and the third package was implemented at the beginning of 1993. Thereafter, the whole area of the European Community has been a home market for Community air carriers. The final cabotage restrictions on air traffic in Europe were removed in 1997.

Analogous to the United States, deregulation has led to significant structural and operational changes within the European airline industry (Doganis 1991, 95). Airlines have restructured their operations and increased cooperation. In the last few years, airlines providing worldwide services have built up alliances through holdings and agreements. Moreover, some national flag carriers have been privatized.

Finnair has had cooperation negotiations with several airlines. At the beginning of the 1990's, the establishment of the Quality Alliance with SAS, Swissair and Austrian Airlines did not materialize. Thereafter, Finnair has concluded cooperation and code sharing agreements for example with Lufthansa, Delta Air Lines, Swissair, Sabena, Alitalia and Transwede. Recently, cooperation negotiations with British Airways about route structure, development of customer service and marketing have been opened.

There has been another structural change in airline markets as airlines are forming hub-and-spoke route structures⁶. The reason for this development trend is that it offers economies of scale and scope in air traffic. On the one hand, economies of scale mainly consist of economies of density in different routes (e.g. McGowan & Seabright 1989, Cronshaw & Thompson 1991). Economies of density arise as the unit costs of operation decrease at the same time the amount of traffic increases on a route. Hub-and-spoke networks allow carriers to increase average traffic levels on all routes. Higher traffic density on a route allows the airline to use larger, more efficient aircraft and to operate this equipment more intensively (Brueckner & Spiller 1994). On the other hand, economies of scope are attainable through a hub-and-spoke route

⁶ The concept of hubbing means that flights from different airports which are the spokes of a network arrive at the hub at approximately the same time (Doganis 1991, 263).

structure as load factors of aircrafts increase and unit costs decrease. In the last few years, Finnair has established a new hub in Stockholm.

After liberalizing bilateral agreements, a number of charter airlines have started to operate scheduled services, since scheduled operations permit charter airlines to charge higher fares, to increase their revenues and to improve aircraft and crew utilization. In addition, several new small airlines have entered the scheduled routes. Most of the revenue-pooling agreements between European carriers have also been abolished (Doganis 1991, 100–103).

At the beginning of the 1980's, air traffic markets were regarded as a case example of contestable markets (Bailey & Panzar 1981, Bailey & Friedlaender 1982). The entry of new airlines was considered easy because of the homogeneity of airline services and the transferability of air traffic fleet into other markets. In contrast, later studies (e.g. Graham et al. 1983, Call & Keeler 1985, Moore 1986) have suggested that air traffic markets do not perfectly fulfil the conditions of contestable markets. In spite of deregulation, there still remain some entry barriers restricting competition in air traffic. For example, computer reservation systems and the allocation of slots may erect entry barriers (McGowan & Seabright 1989).

Competitive strategy and strategic positioning of the case company

The competitive strategy of the case company is to develop a profitable and competitive route structure, taking into consideration the needs of customers travelling from Finland, to Finland and through Finland. Thus, the aim of the company is to focus its services on a geographical market segment. The focus or niche strategy is based on differentiation by offering services of superior quality. In addition, gateway traffic by arranging further connections from Finland to other continents has been increasingly emphasized.

Typically, the main stages of a value chain of an airline are as follows (Shank & Govindarajan 1992):

1. Providing information about seat reservation and ticket services;
2. Flight from point A to point B; and
3. Providing other services to customers before, during and after the flight.

The sources of competitive advantage and strategic cost drivers are different at each stage of the value chain. Although the air service part of the product is fairly homogeneous, the chain of services can be differentiated from that of the competitors more easily than single services. Economies of scope between different stages of the value chain are attainable through vertical integration. Thus, airlines have been keen on expanding their operations vertically into other areas of the travel industry in order to gain greater control over the total travel product (Doganis 1991, 21).

A value chain has not been formed and used in the strategic planning of the case company. However, the operations have been classified into basic services, support services, additional services and special services. Traffic sectors have been grouped into European, Atlantic, Far Eastern and domestic sectors. Furthermore, at the business unit level, the markets have been segmented into five segments: business travel, holiday travel, travelling for special events, or for meeting relatives and friends, and special group travel.

Scale and scope are important structural cost drivers in the case company. In addition, executional cost drivers, for example capacity utilization, total quality management, and linkages with suppliers and/or customers, have been increasingly emphasized.

Planning information of the route decision

The case route was opened for traffic at the end of March 1992. According to the management of the case company, the establishment of the route was a strategic decision to take advantage of the opportunities of the liberalized air traffic markets. In order to be prepared for the deregulated environment, the case company tried to get economies of scope by expanding its route network in Europe.

Airline planning is a dynamic and iterative process (Doganis 1991, 202). During the planning process, calculations were made of expected revenues and costs, and the profitability of the route was anticipated. In addition, the revenues and costs of alternative routes were analyzed. Revenue calculations were based on demand forecasts of alternative routes in different price categories. The preferences of customers in various geographical segments were discovered with the assistance of local organizations placed near the markets. Price information was acquired through IATA, and information about competitors' time schedules through CRS-systems. Revenue and cost calculations are usually made for one year at a time. In broad outline, calculations for route planning are similar for all routes.

The costs of the routes are calculated both for one return flight and for each flight period. Ex ante cost calculations are, as a rule, quite detailed. The total cost consists of traffic costs, technical costs, operation costs, and commercial costs. Traffic costs consist of direct variable costs, for instance fuel, landing fees, and ground handling. Technical costs include line maintenance, overhauls, and spare parts. Operation costs include cockpit, cabin service, and in-flight service costs. Commercial costs are in most cases indirect fixed costs. They include costs of the foreign sales offices and costs of the marketing department of the company.

The establishment of the new route did not entail considerable incremental costs. No new air traffic fleet was acquired for the route. Due to a new airport office established in Barcelona, there was a slight increase in the labour costs and marketing costs in Spain compared with the previous year.

The decision to establish the route was a multi-stage process in the organization. As the organization has been frequently changed, planning calculations are made by several persons in different parts of the organization. Therefore, practical calculatory applications by various departments may differ. Ultimately, the marketing department is responsible for the route planning calculations. The final decision on the establishment of the route was made by the Management Group.

Furthermore, route scenario calculations envision long-run growth possibilities for 15 years, including alternative air traffic fleet choices, and projecting possible demand, cost and profitability.

Control information of the route decision

Profitability in air traffic depends on the unit cost, the unit revenue and the load factors achieved (Doganis 1991, 282). In the case company, there is a control system measuring route profitability. The system controls unit cost and revenues, results by route, by air traffic type and by traffic segment, load factors and freight revenues etc. The system is partly based on actual, partly on budgeted figures.

Route profitability is assessed by contribution margins. As a general rule, both variable and fixed costs should be covered by all established routes. At the latest, the routes have to be profitable within three years. It may suffice, for instance in case of excess capacity that a positive margin over variable costs is earned. Every route is also considered a part of the whole route network value.

By means of the case firm's cost accounting system, it is not possible to monitor customer profitability, as the costs caused by one customer cannot be identified. Neither can the profitability of each customer segment be determined. In particular, the marketing managers regarded this insufficiency of information as a problem. It would be possible to use activity-based costing to examine customer or customer segment profitability. However, according to the Financial Director, customer profitability calculations were considered too expensive to make, even if an activity-based costing system was established.

As a rule, the control system of the case company does not gather benchmark information about competitors. In spite of that, information about competitors' market shares can be achieved. Some non-financial performance measures are used in the case company, for example passenger and overall load factors, flight hours and kilometers, available seat and tonne kilometers, revenue passenger and tonne kilometers and number of passengers, cargo and mail. It seems, however, that the non-financial measures are not systematically consonant to the strategy of the company.

In the case company, route planning and control calculations are made at different

departments. The marketing department is responsible for route planning calculations, whereas route profitability calculations are carried out at the department of internal relations and traffic planning. This decentralization appears to cause problems in the flow of information.

Budget reports are produced monthly, and exact reports on budget deviations are obtained from quarterly accounts. However, especially at the marketing department, information about budget deviations was not received quickly enough on the lower organizational levels.

The level of detail in planning and route profitability calculations has increased during the last few years. This seems, at least partly, to result from economic deregulation, since increasing competition calls for detailed information about costs even at the establishment stage of a route.

The established case route has reached its short-run and long-run objectives quite well. In the spring of 1995, two years after its establishment, the profitability of the route was better than the budgeted profitability figures. In addition, the traffic frequency on the route has been increasing.

Analysis of strategic control information of the route decision

Planning and control information assisting the management in the route decision of the case company was analyzed by the theoretical model of strategic control information developed in the study. Furthermore, the applicability of information to the deregulated environment and to the service sector was investigated.

According to the Executive Vice President of the marketing division, the establishment of the route was a strategic long-run investment. In the long run, high profitability and a large market share were the principal objectives of the route. These objectives are similar to the objectives of build units in the portfolio models of strategic planning. The market environment of build units is often uncertain, and products are at a growth stage of their life cycles. In contrast, the objective of budgets in the case company was to control the achievement of targets. Therefore, this budget objective seems to be unsuitable for the business environment of the case company. In the uncertain and turbulent competitive environment, companies following a build strategy would rather need budgets to support their planning functions.

The case company has not decisively changed its competitive strategy in order to be prepared for economic deregulation in the environment. However, the company has actively begun to take advantage of the opportunities of deregulation in its route planning. Finnair has been one of the first airlines in Europe that has actively expanded its route structure due to deregulation. Deregulation is regarded as an opportunity for the company. The established route gave Finnair cost advantages, and assisted in following the differentiation strategy.

Traditional methods were emphasized in generating information for the strategic planning of the case route. Moreover, the information gathered was short-run information for the most part. A value chain for the route was not identified, and therefore the strategic objectives for each value activity could not be specified. Lack of a value chain was found a drawback in the planning and control system of the case company. However, it would have been difficult to identify the value chain, as the responsibility centers of the functional organization were not analogous to value activities.

The planning information of the route, for instance the SWOT analysis, was mostly based on internal information of the company. Moreover, internal performance measures were emphasized in the control information of the route. Profitability, service level, and load factors were measured by traditional management accounting variance analyses. Measurement of the cost, profitability and load factors of the route was principally considered to support the cost leadership strategy. In contrast, measurement of the quality of services was connected to the customer-oriented differentiation strategy.

Gaining a sustainable competitive advantage calls for continuous improvement. Increasing competition has gradually led the case company to changing its control systems so that they are more agile and detailed than before. The use of historical data has been considered a drawback in the present control system of the case firm. More future-oriented information would be needed. Moreover, the control system did not systematically report benchmarking information. More information especially about competitors was considered to be expedient in the decision making process of the company.

The organizational structure of the case company has frequently been changed. Due to the formal and rigid organizational structure and a strong corporate culture, the changes have resulted in much resistance within the organization, gradually, however, in a less degree. As deficient coordination between different service functions was considered a problem in the organization, the organizational structure of the case company was recently centralized. However, centralization may restrict the flow of market information to each part of the organization, and it may hamper the progress of a service culture.

Most of the characteristics typical of service companies could be found in the strategic control information of the case company. Customer-driven planning and control information was emphasized. Information about demand factors was gathered, in particular, as revenues were considered critical in the budgeting process. Customer needs were examined by the local organizations of the company. In the last few years, customer focus has been increasingly emphasized in the case company. As the preferences and the quantity of resources used by each customer vary, it would be important for management to be aware of customer and customer segment costs and profitability.

5 CONCLUSIONS AND DISCUSSION

The purpose of the study was to analyze how airlines use their management control systems in order to gain a sustainable competitive advantage in a situation of environmental change resulting from economic deregulation. Moreover, the distinct characteristics of strategic control information in the service sector were studied.

First, a general model for strategic control information applicable to various industries and environments was developed. Second, in the empirical case study, the strategic control information in an air traffic route decision was investigated. An airline was chosen as the case company, on the one hand, because it is a service company, and on the other hand, because the environment of air traffic is rapidly changing resulting from the deregulation process.

Strategic control information was defined as the information generated by management control systems to assist management at all stages of a strategic decision process, and which emphasizes long-run external information. The objective of strategic control information is to contribute to management decision making in order to gain a sustainable competitive advantage. The competitive strategy affects the characteristics of accounting information needed at the planning stage. The achievement of strategic objectives is measured by control information.

In conclusion, producing planning and control information for strategic decision making in the case company was mainly based on traditional methods, and the control systems did not generate a great deal of information in accordance with the theoretical model developed in the study. Contribution margins were used to assist strategic planning, although they may not be considered particularly suitable for strategic long-run planning purposes. The information assisting decision making was short-run information for the most part. The control information of the case company was concentrated on internal performance measurement, and the control system did not systematically collect benchmarking information about customers and competitors.

Strategic control information could have been used more in order to aid decision making in the case company. Nevertheless, it is obvious that strategic viewpoints were, at least in part, taken into account in management decision making, in spite of the shortcomings of the control system. An indication of this is that the route decision supported the competitive strategy, and it seemed to be possible to achieve a sustainable competitive advantage by the established route.

Entry and prices have been strictly regulated in air traffic. During the past ten years, a gradual deregulation has taken place and a significant change in the competitive environment can be identified. According to the empirical analysis, the control system in the case company

was not able to produce information applicable to the deregulated environment. Especially the flexibility of the control system had not fulfilled, up to the end of the 2-year interview period, the requirements of the deregulated environment.

In the 1990's, however, the management control systems of the case company have been under a development process, and the company has gradually begun to adjust its competitive strategy and organizational structure to the deregulated environment. The characteristics of strategic control information were not clearly found in the route decision investigated in the study. Recently, the agility and flexibility of the control system have been increased and customer focus has been emphasized.

In the case company, the development process of the control system aims at limiting the amount of information the top management has to deal with. In response to the increasingly competitive environment, the control system will be changed to be more interactive. This finding supports the dynamic process model developed by Simons (1990, 1991, 1995). On the basis of his model, interactive management control systems are used in order to give top management information about strategic uncertainties that arise as the firm aims at gaining competitive advantage.

In addition, this study provides support to the results for other strategic management accounting research. First, the study suggests that the control information of the case company has increasingly emphasized customer focus. This supports Bromwich's (1990) point that products are a package of characteristics offered to consumers. In order to survive in a competitive market, a firm must offer the cheapest way for the consumer to obtain the bundle of characteristics being offered. There is therefore a need for market-oriented information for decision-making.

Second, the need to develop planning and control systems has been realized especially at the marketing department of the company. This conclusion is consistent with the results of Cunningham (1990, 1992). He found that companies in highly competitive environments have management control and accounting systems that are dominated by marketing considerations. As marketing functions pull information through the system, they are considered to be accounting crafts.

Moreover, the studies of strategic change processes in organizations (e.g. Scapens & Roberts 1993, Scapens, Burns & Ezzamel 1996, Kloot 1997) suggest that management accounting practices tend to change slowly. In the last few years, the planning and control systems of the case company have been gradually developed to be compatible with the changing competitive environment. The change process continues to be in progress.

The model of strategic control information developed in this study will be useful for further studies. The characteristics of strategic control information can, at least, be generalized to

apply to other traffic companies producing mass services. Furthermore, future work could extend the analysis of one strategic decision to the examination of planning and control systems at the company level. ■

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