



Pekka Killström

STRATEGIC GROUPS AND PERFORMANCE  
OF THE FIRM

- TOWARDS A NEW COMPETITIVE ENVIRONMENT  
IN THE FINNISH TELECOMMUNICATIONS INDUSTRY

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HELSINKI SCHOOL OF ECONOMICS

ACTA UNIVERSITATIS OECONOMICAE HELSINGIENSIS

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From curiosity to eagerness and passion

The more the challenging strategy management problems were solved, the more versatile theories opened new tempting landscapes. Which of the rewarding roads should be followed to learn more of the strategy-performance connections of the firm and thus, make my personal research vision come true? As in life general, the research decisions had to be made on the bases of intuition and experience, through hard work and trusting the experts as well with the supporting help of the closest persons.

The pursuit of the vision means working alone unyieldingly. However, along the research journey, it became evident that the final result can be reached only by the intensive team work. Thus, I would like to express my deepest gratitude to the inspiring persons and the supporting organisations, which contributed to my vision come true.

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An interesting research journey has been successfully completed. Still, the final strategy-performance connections of the firm are waiting to be solved.

Espoo, January 2005

Pekka T.C Killström

## ABSTRACT

This dissertation contributes to the understanding of the strategy-performance differences of the firms within an industry. The theoretical framework is positioned to the joined perspectives of the Business Policy tradition (BP) and the Strategic Group discipline (SG-discipline) - an enlargement of the Industrial Organisation Economics tradition (IO). Specifically, the empirical focus has been on the Finnish Telephone Companies (FTC), which have operated in a remarkably changed competitive environment.

The research problems cover the critical strategy and performance elements of the firm, the construction of the advanced strategy-performance model (ASP-model), the identification of the strategic groups, the reconstruction strategy and performance models followed among the strategic groups in the FTC, and the strategy and performance differences between the best and worst performing telephone companies in the strategic groups.

The strategy management literature suggests that the strategy-performance connections should be defined through the scope and resource configurations as well as the external effectiveness and the internal efficiency of the firm. Depending on the perspective of the tradition, it seems that the performance of the firm is influenced either by the industry structure (IO), by the strategy of the firm (BP) or by the strategic group (SG-discipline) as an intermediate level between the industry and the firm. The SG-discipline stresses the role of the entry, exit and mobility barriers. Furthermore, the managers' mental models have been emphasised. However, it is evident that none of these perspectives can alone explain the differences between firms within an industry. The extant strategy-performance perspectives above include inaccuracies and some relevant aspects have been ignored.

The present study introduced the revised role of the effectiveness that refers to the strategic direction of the firm. Respectively, the efficiency shows how the strategy is implemented. These definitions also earn their logical role in the SG-discipline context. As entry and exit barriers refer to the industry portfolio of the corporate, the mobility barriers refer to the business level effectiveness. To complete the strategy-performance connections, a new strategy implementation level mechanism, the flexibility barrier, has been introduced as the counterpart for the efficiency. Furthermore, by including the internal and external process results as the preceding stages of the economic performance in the ASP-model, the importance of the strategy implementation measurement, the knowledge of the market needs and the strategy engagement of the personnel of the firm are emphasised.

The size of the firm has been used as the clustering criteria for constructing the strategic groups. The size, in terms of the firm's total resources, reflects the strategic market possibilities, among which the strategic choices are relevant. It is also a most convenient referral point for the managers, who, with their mental models, make the strategic decisions for the firm. The ASP-model was also applied within the strategic group to show the strategy and performance dynamism among the strategic group members.

The ASP-model was empirically applied during a unique period in the FTC. Due to the de-regulative actions, the industry turned from a monopoly towards the oligopolistic competitive environment. Also the new services changed the economic performance possibilities remarkably and in turn the need for renewing the earlier strategies followed within the strategic groups.

The data has been collected from the public statistics from Finnet Group Association, Sonera Ltd and Mainostieto Ltd. and by means of market research. The internal personnel research data has been collected using a questionnaire. In the data analyses, direct distributions and principal component analysis methods have been utilised.

The empirical findings strongly support the theoretical presumptions of the present study. A National Group, Helsinki Group, Regional Group and Local Group were identified, logically covering the geographical market. The applied ASP-model shows differences between the strategic groups. The National Group with the one large-sized group member was the leader of the industry evolution from the geographically limited market towards the new potential market. The mobility barriers were constructed through the growth of the fixed-assets and the personnel resources. The flexibility barriers consisted of the mobile phone and data transmission business growth, reduced prices for company customers, enormous advertising growth and the increase of company accesses and personnel. The strategy resulted in a rapid increase in turnover share, but a decreased profitability share. The Helsinki Group with one large-sized group member moved slowly towards the same strategic direction as the industry leader. The ingredients for mobility barriers were the increase in fixed assets and personnel education by internal financing. The flexibility barriers were created from the fixed-net and mobile call business, price level and advertising increase as well as capital cost and channel rent decrease. The strategy process resulted in profitability share growth but only a moderate turnover share growth.

The Regional Group with mid-sized group members focused on local markets, but moved towards the mobile call and data transmission market. The mobility barriers were constructed with personnel and fixed-assets growth. The flexibility barriers show moderate service growth, cautious price increase together with growth in personnel and capital costs as well as with channel rent growth. The strategy resulted in the decrease of turnover and profitability shares. Altogether, the Regional Group developed slowly towards the new competitive environment in the industry's evolution. The Local Group with small-sized group members focused on local markets, but moved towards the new market. The mobility barriers were constructed with high solvency growth and a decrease in personnel size. The flexibility barriers are labelled with cautious price changes, decreased capital costs and channel rent growth. The strategy resulted in a small turnover share growth and a decreased profitability share. The Local Group developed slowly towards the new competitive environment.

The dynamism and the role of the managers' mental models within the strategic groups is shown through the best and the worst performers. The strategic group evolution leaders were clearly identified. Despite the varying potential, the best performing group members followed systematically different strategies and performed systematically better in nearly all aspects compared with the poor performers.

Altogether, the contributions of the present study show that as the strategy-performance connections and industry evolution are explained on the business level strategy, the explanation model should include the observation of the influence of the strategic group mobility barrier effectiveness and the operational level flexibility barrier efficiency, both of which together reflect the managers' mental decision models in practice.

Key words: strategy, strategic groups, effectiveness, efficiency, mobility barrier, flexibility barrier, performance, business level, functional level, Telecommunications Industry

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## LIST OF ABBREVIATIONS

ASP -model	= Advanced strategy-performance model
BP	= Business Policy, research tradition
ESOMAR	= European Society for Opinion and Marketing Research
FCA	= Finnish Competition Authority
FG	= Finnet Group
FGA	= Finnet Group Association
FICORA	= Finnish Communications Regulatory Authority, prior to 2001 Telecommunications Administration Centre
FIM	= Markka, previous Finnish currency prior to 2002
FTC	= The Finnish Telephone Companies as a whole
FTI	= The Finnish Telecommunications Industry
GNP	= Gross National Product
GSM	= Global System for Mobile communications, cellular radio standard
IO	= Industrial Organisation Economics, research tradition
IP	= Internet Phone call
ITU	= International Telecommunications Union
MBV	= Market based view
NTM	= Nordic Telecommunications Mobile, cellular standard
PIMS	= Profit Impact of Market Strategies
RBV	= Resource-based View
S-C-P-model	= Strategy-Conduct-Performance model
SG-discipline	= Strategic Group-discipline
S-P -model	= Strategy-performance model
TC - revenues	= Total call revenues

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## I INTRODUCTION TO THE RESEARCH CHALLENGE

The focus of this dissertation is on the strategy-performance connections of the firm. Because these connections are complex issues, they have been studied from many different theory viewpoints. Some of the research traditions suggest carrying out studies that are focused on the firm characteristics, while some suggest that the most fruitful research grounds are based on the industries as a whole. Altogether, the competitive environment, the market, and the resource allocation of a firm are too complicated that the strategy-performance connections would have been explained in a totally satisfactory way. Thus, the strategy management theories need to be developed further.<sup>1</sup>

Because the present research is focused on the aspects, which explain how firms may gain better economic performance, the main interest is to produce a contribution to those strategy management theories, which help to teach us more of the economic success and failure of a firm. The fundamental questions are: "Which of the research traditions should be followed? Which of them has ability to simplify the phenomena, is understandable, has explanatory and predictive power concerning the performance of the firm? Which of them serves managers' decision making in practice?"<sup>2</sup>

The Strategic management research tradition, also known as the Business Policy tradition (BP), has its origins in practice.<sup>3</sup> It evolved from concept descriptions to intellectual theory. It therefore fulfils the requirements of usefulness to the decision-making of individual firms in practice. On the other hand, the Industrial Organisation (IO) economics research tradition has its focus on the industry structures as a whole.<sup>4</sup>

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<sup>1</sup> Researchers are after a good strategy theory. See e.g. Carroll, 1993; Rumelt et al., 1994; Prahalad and Hamel, 1994; Mintzberg and Quinn, 1996. Barney 1997. Rumelt, Schendel and Teece, 1996, p. preface xi, call after good strategy research: "*The time is ripe for strategy scholars to redefine the field in terms of fundamental questions rather than in terms of techniques, empirical methods, 'conceptual schemes', or even the perspective of purely discipline-based theories*".

<sup>2</sup> See e.g. Snehota 1990, pp. 10, who discuss the nature of a strategy management theory. See also Porter in Rumelt, 1994, p. 421.

<sup>3</sup> Rumelt et al., 1994, pp. 9-10, 24; Barney, 1997, preface vii.

<sup>4</sup> Barney, 1991.

Its enlargement is the Strategic Group discipline (SG-discipline), which is an intermediate level between an individual firm and industry, and which serves strategy researchers and managers better than IO in achieving explanatory power between the strategy and performance of the firm.<sup>5</sup> The SG-discipline also applies a more holistic approach in a dynamic competitive environment instead of studying certain specific phenomena, which usually do not serve managers' strategy decision-making satisfactorily. It is, however, evident that neither the BP nor the SG-discipline alone is able to satisfactorily explain the links between the strategy and performance of the firm. Both of them are therefore required.

The empirical focus of the present study is on the strategies and performance of the Finnish Telephone Companies (FTC).<sup>6</sup> These companies were chosen as research objects for several reasons. First, mankind is living in an era of The Fourth Revolution of Communication, which will evidently cause tremendous changes in the strategies of the firms competing generally in the telecommunications industry.<sup>7</sup> This revolution can be seen in the growth figures of the telecommunications industry in Finland as well as all over the world.<sup>8</sup> Among all the industries in the world the telecommunications industry ranks third in terms of market capitalisation after healthcare and banking.<sup>9</sup>

Secondly, the role of telecommunications has been changing and growing at a remarkable rate during the last fifteen years in Finland. Therefore, it has been on the focus of profound de-regulative actions by the National Communication Strategy.<sup>10</sup> Due to these liberalisation actions, the Finnish telephone companies confronted new strategic challenges in the competitive environment, competitors and growing customer needs. Actually, they were forced to prepare competitive strategies – to re-allocate their resources – in order to retain

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<sup>5</sup> Porter, 1976; Porter and Caves, 1977; Lahti 1993.

<sup>6</sup> The Finnish telephone companies and the mergers between these companies are in Appendix 1.

<sup>7</sup> Savolainen and Himanen, 1995 p. 12. Three earlier revolutions were the birth of oratory means, the birth of the means to save communication – e.g. writing – and the birth of the knowledge of printing.

<sup>8</sup> Statistics of the Ministry of Transport and Communications, 1992-1998. See also the key figures in Statistics Finland 1999. Kajanto, 1997, argues that interactive information networks areas are under an exceptional rapid development. New products announcements, technological improvements and business initiatives have been launched. Director Mr. Matti Alahuhta, Nokia, Talouselämä (20/1999) argues that the biggest firms cannot be managed without telecommunications-services. Telecommunications-services will go even deeper in the core functions of firms.

<sup>9</sup> E.g. in 1996 the value of telecommunications-services in the world was over US 700 billion dollars, World Telecommunications Report 1998.

<sup>10</sup> The Government program defines the objective as follows: "to make information technology and networks as tools to restructure business life and the public sector and to make the information industry a major business of the future in Finland. ".

their targeted economic performance levels. At the same time, many technology innovation launches offered new business possibilities.

Thirdly, the Finnish telephone companies are fruitful objects for researchers interested in the strategy-performance connections in the strategic groups, because the telephone companies have very different amount of resources, which they allocate in very different ways in different geographical areas. Some of the telephone companies may even face the pressure to change their strategic group membership. It is also interesting to see how they modified the strategies and performance because of the remarkable changes in the competitive environment. The research object is also interesting because no holistic and covering strategy-performance study among Finnish telephone companies as a whole is available.



## 1. THE RESEARCH OBJECTIVES AND SCOPE OF THE STUDY

The objectives of the following paragraphs are (1) to introduce the strategy-performance theme of the present study, (2) to define the detailed research objectives and (3) to specify the scope of the strategy changes in a fast changing competitive environment like FTI.

### 1.1 The objectives of the study

In general, different research traditions have different assumptions concerning the same phenomena. They may deal with certain aspects, and they may neglect those features that are not well-suited to, or central from the perspective of the discipline in question. Also, the strategy and performance of the firm have been discussed from several viewpoints. The problem is not the lack of suitable strategy-performance research traditions, but rather the amount of numerous promising research disciplines to choose from.<sup>11</sup> For example, Mintzberg categorises as many as ten different strategy schools with their different focus on strategy-performance connections in a firm.<sup>12</sup> It is typical that each strategy management tradition speaks solely in favour of its own unique view.<sup>13</sup> They all have much in common, but they also show considerable differences.<sup>14</sup> Furthermore, the focus of these studies is based on several issues such as the industry as a whole, groups of firms, individual firms or targets within a firm and the managers' behaviour.<sup>15</sup> Some of them explain the business enterprise and strategy as a part of other phenomena.<sup>16</sup> The first important fundamental research task is therefore to choose the right research tradition, a tradition that best serves the objectives of the present study.<sup>17</sup> For example, Snehota argues that there are hardly any comprehensive theories of a business enterprise adopting the management perspective:

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<sup>11</sup> A research tradition consists of similar assumptions shared by researchers. See e.g. Snehota 1990, p.7.

<sup>12</sup> Mintzberg 1998; See also Rumelt, 1994 and Snehota, 1990, pp.162-163.

<sup>13</sup> Snehota 1990, pp.2-4 and p.7. Rumelt et al. 1994 argue: *"Each theory focuses on a single issue and develops it to its local conclusion, but might ignore other issues."* Also Möller, in Näsi 1991 p. 200, states that *"Each theoretical approach is based on varying assumptions and generally provides a specific view of some sub-domain of interest"*.

<sup>14</sup> Perhaps that is why Porter, 1996, p. 61, asks "What is Strategy?". Mintzberg and Quinn, 1996, argue that "There is no 'one best way' to create strategy."; Mintzberg 1998; Barney, 1997, p.9, shows different strategy and strategy management descriptions.

<sup>15</sup> See e.g. Porter 1978 p.101; McGee and Thomas 1986, p. 141; Snehota 1990, pp.154; Barney 1991; 1998.

<sup>16</sup> Snehota, 1990, pp. 3-4, counts e.g. economics, social psychology and sociology.

<sup>17</sup> E.g. Kuhn, 1970, p.19, warns to avoid research views where no paradigm is available. He states that there might be too many pitfalls, if the researcher takes the freedom of renewing the boundaries between different theory traditions. On the other hand he reminds of the possible rewarding results of building new tradition.

there are several theories, but it seems that no dominating theory exists.<sup>18</sup> The task of tradition selection is not an easy one, because many traditions have made significant improvements in order to understand the strategic behaviour of the business enterprise.<sup>19</sup>

The first focus of this research is on the theoretical views, which aim to explain how the market structures affect the firms' economic performance. They apply the Market-Based View (MBV). The Resource Based View (RBV) perspective is also included in the study, because it stresses the important role of the managers in resource allocation. In literature these views are often handled separately as if they excluded each other. Both of these views are, however, in connection with the resource-based barriers, which create different level competitive structures within an industry. The MBV and RBV perspectives will therefore be utilised together in the present study as Makhija, among others, recommends.<sup>20</sup>

#### Economic research approaches to be followed

In terms of the present study it is interesting to learn more of the connections between the firm strategies and the economic performance from the managers' decision-making viewpoint. Clearly the main purpose of a business enterprise is to maintain economic performance through economic exchange, because a successful pursuit of performance ensures the survival of the firm.<sup>21</sup>

The roots of the economic performance viewpoint of the firm are to be found in classical and neoclassical economics.<sup>22</sup> They argue that a completely decentralised economic system and efficient rivalry are guides for the firms to make optimal production output decisions to maximise profits. They also argue that maximising profit would be the only goal of firms and that firms would be the only productive agents. Furthermore, the traditions argue that the competition encounters all the firms in the similar way, and it has the same effect on the

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<sup>18</sup> Snehota 1990.

<sup>19</sup> Rumelt 1994, pp. 21.

<sup>20</sup> See e.g. Makhija, 2003, p. 433.

<sup>21</sup> Williamson, in Rumelt, 1994, p.362-363, expresses the economic approach as follows: "*Economy is the best strategy.*" He argues that competitive advantage aims to yield an economic situation, where cost is exceeded by revenues generated. Barney (2002), p.26, emphasises the economic role of the firm: "*An organisation is an association of productive assets (including individuals), who voluntary come together to obtain economic advantages.*" See also Williamson, 1975, 1985 and 1991; Snehota 1990, p. 159;

<sup>22</sup> Cyert & March, 1963; Cohen and Cyert, 1975.

performance of the firms in the industry.<sup>23</sup> The traditions argue that the industry structure would explain the resource allocation patterns and the performance of the firms. Thus, the firms try to produce an output corresponding to the point of the marginal revenue and marginal cost curves intersection.<sup>24</sup> Significant critique against the neoclassical economics tradition may be expressed. For example, it assumes away the competitive features of individual firms, which means that all firms in an industry should have the same strategy and competitive actions in order to achieve good economic performance.<sup>25</sup>

The IO tradition has moved this strategy-performance approach closer to the realism of the competing firms by focusing on the relationships between the market structure, the firm conduct and performance; the so-called S-C-P model. Still, the IO tradition argues that market structure as a whole is the key to determining the firms' market performance.<sup>26</sup> However, the enlargement of IO-tradition, that is the SG-discipline, fills the conceptual space between industry and individual firms as the performance of the firm is explained by the strategy followed. This is a most significant move towards realism, because instead of suggesting that industry structure determines industry performance, the SG-discipline assumes that competition provides strategic opportunities for firms to be actively utilised within an industry.

The Business Policy (BP) tradition, which has been developed from the views of behavioralism and managerialism, is also interested in the economic performance of the firm. The BP tradition differs from IO in that it focuses on the individual firms' strategic conduct and performance. The works of Chandler and Ansoff, in particular, who saw firms as economic entities in a turbulent environment, give an additional interesting starting point for the research focused on the connections between the strategy and performance of a firm.<sup>27</sup>

Later, RBV strongly influenced the views of BP. For example, Hoopes et. al. argue that resource allocation is one important complementary explanation for intraindustry

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<sup>23</sup> Snehota 1990, p.90. See also Barney 1997, p.66.

<sup>24</sup> See e.g. Cohen and Cyert, 1975, who discuss the utility function and the utility that the customer receives.

<sup>25</sup> Mahoney, 1992, pp. 369.

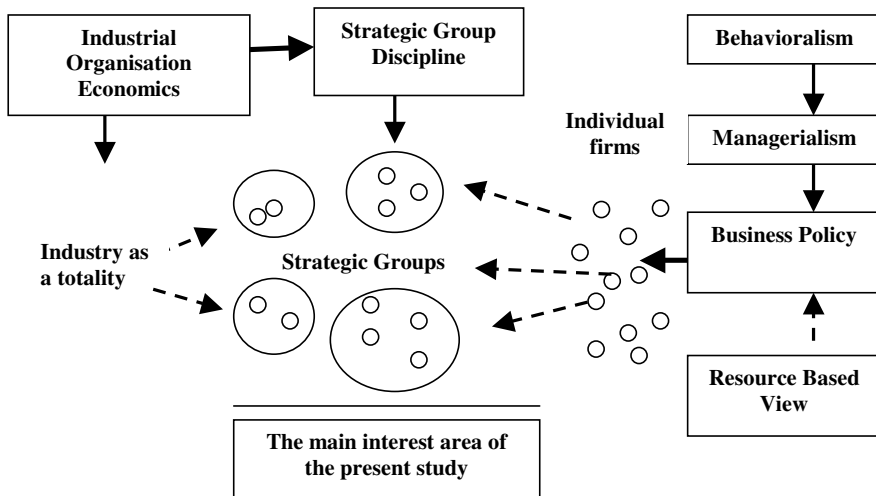
<sup>26</sup> See 'Bain-Manson' or 'Structure-Conduct-Performance' paradigm in Bain 1979, Caves 1977, Scherer 1980 or Barney 1991 and Barney 1997.

<sup>27</sup> Chandler, 1962; Ansoff, 1965.

performance differences.<sup>28</sup> They suggest that combining the approaches of IO, Organisation and BP theories, RBV gives additional answers as to how the firms maintain their unique position in competition, because, for example, it highlights the managers' important qualitative role as the main guiding force of the strategic and operational behaviour of the firm. Involving the managers as performance gaining actors in the firm, the understanding of strategy-performance is clearly increased. Thus, it is indeed easy to share Lahti's view about a tradition excluding managers: *"This kind of static and impersonal strategy thinking does not provide any viable solutions"*.<sup>29</sup>

The SG-discipline and BP tradition discussed above suggest that the competitive environment, resource allocation, economic performance perspective and managers have central roles in the strategy and performance of the firm. Thus, these traditions give the most promising theoretical bases to explain why firms differ from each other in strategy and performance elements. In parallel, they seem to help managers with their strategy tasks in practice. That is why the present study is also based on these traditions. Figure 1.1 illustrates the research approach among these research traditions.

Figure 1.1 Research tradition approaches to be followed



<sup>28</sup> See more of RBV e.g.: Barney, 1991; Porter, 1991, p. 108; Noda and Collins, 2001; Makhija, 2003; Hoopes, Madsen and Walker 2003, p. 879 and 889. See also McGahan and Porter, 1997.

<sup>29</sup> Lahti in Näsi 1991, p.147.

Figure 1.1 stresses the role of the strategic groups as the intermediate level between industry and individual firms. Thus, the SG-discipline provides additional and valuable conceptual help for managers as they try to simplify their strategy task in a competitive environment where the industry borders change and firms are linked together with an increasing number of relationships.<sup>30</sup> The managers' important role as decision makers in the strategy process is also strongly emphasised by the SG-discipline.

### The research object

The empirical research objects of the present study are the Finnish Telephone Companies (FTC). In addition to them, the total Finnish Telecommunications Industry (FTI) consists of many rapidly developing telecommunication services and networks operated by technology, software, media and telecommunication companies.<sup>31</sup> However, until recently, the FTC members have been the dominating telecommunication network and service providers and formed the most essential part of the FTI.<sup>32</sup> For this reason, all the other telecommunications companies are excluded in the present study. They are also excluded because they did not either compete on the market, or the research data was not available, or they did not operate during the whole research period, or their competitive role was marginal.<sup>33</sup> For example, the service providers that focused only on Internet services are excluded, because the growth of these providers began only in 1996.<sup>34</sup>

Initial contact with the FTC indicated that it is an interesting research object both from the theoretical and the managerial viewpoints offering remarkable contribution possibilities for the strategy-performance connection explanation especially within the SG-discipline. This is due to the large number of the different sized telephone companies, the different

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<sup>30</sup> Mahoney, 1992 pp.369 stresses the importance of resources in strategy-performance studies to cover the main economic issues of the firm. See also Peteraf and Shanley 1997; Gordon and Milne 1999.

<sup>31</sup> Pere defines The Telecommunications Industry as follows: Networks operators provide networks to be used in telecommunications services. Service operators provide services in networks. Kajanto, 1997, states that telecommunications networks carry media for information purposes. According to him organisations that offer access to the networks are networks operators. Service operators provide systems and services that operate through telecommunications-networks.

<sup>32</sup> According to Barney: 1997 p. 125, the definition of industry might often be ambiguous.

<sup>33</sup> Some operators provided services only for limited users, e.g. VR-Track. Cable-television was excluded, because according to Kajanto 1997, p. 20, it transmits non-interactive information to multiple locations, whereas telecommunications networks are interactive.

<sup>34</sup> According to the Statistics of The Ministry of Telecommunications and Transport, 1997-1998 there existed 50 Internet service providers in 1997 in Finland. Their role was small. E.g. the turnover of RSL-COM, which provided the market with IP services, was only 12 million FIM in 1998.

geographical market coverage, and the change of the industry competition, all of which are expected to have significant influences on the strategy and performance of the telephone companies in the various strategic groups.

Most of the Finnish telephone companies, that is Sonera and the Finnet Group (FG) members decided to participate in the present study.<sup>35</sup> However, Telia refused to be involved in the study.<sup>36</sup> This does not, however, lower the result quality, because the research covers nearly the whole of the FTC.

### The research problem

The strategy management research traditions, especially the SG-discipline discussed above and the interesting industry with exceptional great competitive changes were the fundamental reasons for the selection of the FTC as the research object of the present study. The aim was to obtain answers to the following questions: What are the strategy differences between the strategic groups and the telephone companies inside the strategic group? How do they perform with their varying amount and quality of resources in a changing competitive environment? Thus, the research problem of the present study is formulated as follows:

Table 1.1 The research problem

**What are the critical strategy and the performance elements of the strategic groups among the Finnish Telephone Companies in the changing competitive environment?**

In order to answer the research problem, a series of tasks are performed:

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<sup>35</sup> Interviews: Mattheiszen, Weckström, Reinamo. Finnet Group includes the Finnish private telephone companies and Finnet Association.

<sup>36</sup> In 1996 the CEO of Telivo refused to participate because of the ownership reconstruction. The owners of Telivo were Imatran Voima Ltd and Swedish Telia Ltd.

**(1) Construction of the model, which identifies the ex ante strategy and economic performance elements of the firm.** The industry as a whole is not the most relevant level in explaining the performance of the business strategies. Using the basic arguments of the SG-discipline together with a holistic strategy-performance model, the understanding of the connections between the strategy and the performance of the firm may be completed.

**(2) Identification of the strategic groups among the Finnish telephone companies.** If strategic groups cannot be identified, the research basis to some extent vanishes.<sup>37</sup> On the other hand it might mean that industry structure would be the dominant aspect and that the role of managers is to adapt the company's resource allocation model to the industry structure. It has been proven, however, that industry level strategies do not reveal firm strategies.<sup>38</sup> On the other hand it might mean that the managers in the independent firms could act successfully without considering anything other than the competitive individual firms. In the light of the previous strategic group research, it is reasonable to expect that strategic groups exist in the FTC.

**(3) Reconstruction of the strategies, which the various strategic groups have followed during the unique deregulation period between 1992 and 1998.** The objective is to identify the strategy profiles in each of the strategic groups, in order to show how the strategic group members have allocated their resources during the research period in the keenly competitive environment.

**(4) Identification of the performance model to explain the performance resulting from the strategies followed in the strategic groups.** This will be performed by examining the effects of resource allocation and the competitive environment elements on the economic performance.

**(5) Identification of the main strategy and performance differences between the best and the worst performing telephone companies in each of the strategic groups.** In a

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<sup>37</sup> Dranove, Peteraf and Shanley 1998, list viewpoints that strategic groups might not exist. However, they also point out different effects on strategies on the strategic group and firm levels. Thomas and Pollock, 1999, suggest observing individual firms as the performance of strategic groups is explained. Nair and Filer, 2003, p. 155, argue that *"while strategic group strategies display long-run equilibrium, individual member strategies tend to display behaviour that converges or diverges around the equilibrium"*.

<sup>38</sup> See e.g. Lahti 1983a; Thomas & al. 1987.

dynamic competitive environment, the firms may change strategies and the strategic group membership. These changes obviously have an effect on the strategy and performance of the individual firms in the industry, therefore the present study is also interested in individual firms.

## 1.2. Additional research scope specifications

The additional research scope specifications are important - even inevitable with regard to the answers of the research problems. The additional specifications concern the strategy levels and time period selected.

### Research interest on the business level strategies

The hierarchical nature of the strategies of the companies is argued profoundly in the strategic management literature. Three levels have been identified: corporate, business and functional level strategies.<sup>39</sup> Corporate level strategy is referred as the *inter-industry* strategy, which concerns the selection of the industry or industries within which the company intends to compete. Thus, the choices of the scope and resource deployments of the firm are between the industries. The examination of this strategy level goes, however, beyond the scope of the present study.

The business level strategy is referred to as the *intraindustry* strategy. It is of special interest, because of the direct connection to the economic performance of a firm.<sup>40</sup> The essential question is "How the firm should compete within a particular industry?" The importance of this strategy level is profoundly supported by strategy management theories such as in forming the competitive strategy in an industry, in implementing and maintaining a competitive strategy and in monitoring the industry and market.<sup>41</sup> This strategy level concerns the selection of market scope and resource allocation in a specific industry environment, because resource allocation, competitive actors, and functional strategy level activities are tied together through management control in striving towards the economic

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<sup>39</sup> See e.g. Hofer and Schendel, 1978, Abell 1980, Hambrick, 1980; Beard and Dess 1981, Lahti 1983a and Lahti 1985; Fiegenbaum and Thomas, 1990; Barney, 1996.

<sup>40</sup> E.g. Rumelt, 1991 argue that the business level approach is the most important as the performance of the firm is explained.



goals of the firm.<sup>42</sup> The business level strategies deal especially with the exploitation opportunities. These strategies also try to overcome industry and strategic group isolating mechanisms and raise new ones.<sup>43</sup> In order to understand how the firms achieve economic performance in the competitive environment, the focus of the strategy research must be on business level strategies and the functional level operations.<sup>44</sup>

#### An interesting and unique research period

Fiegenbaum et. al. argue that many of the strategic group studies have been performed on an *ad hoc* basis in terms of the time periods chosen.<sup>45</sup> It is also worth noting that firms are generally different in their strategic behaviour because of the issue of time and one year is not usually long enough to reveal the firm's strategic or performance continuity.<sup>46</sup> RBV for example encourages us to utilise longitudinal evaluations of the strategy, which also in turn enables the examination of the permanency of the strategic group constructions over time.<sup>47</sup> The essential question is: "How long a time period should be chosen for the empirical research?" The simple answer is: It is crucial to cover a period long enough to produce relevant research results and avoid biased results.

The time period of the present study, that is the years between 1992 and 1998, is one of the main specifications in this study. It was carefully chosen so that the results contribute to the strategy management theories in general and the SG-discipline in particular covers the most essential strategy, performance and competition feature changes in the industry as well as the decision support needs of the managers in the FTC. It would have been interesting to include data from the years before 1992 in the analyses, but the data was not available for the small telephone companies – even the larger telephone companies are to some extent short of data before 1992. Similarly, after the year 1998 most of the telephone companies

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<sup>41</sup> Möller in Näsi 1991, pp. 204.

<sup>42</sup> Hatten, 1974, show that strategy could be quantified and measured by elements associated with functional areas of firm. Rumelt, 1991, argues that half of the firm profitability can be accounted from the differences in business level strategies of the firms. See also Lahti 1983a, p. 3.

<sup>43</sup> Snehota 1990, p. 183; Hofer and Schendel, 1978, pp. 27-28, stress that "The distinctive competitive advantage on the business strategy level is the most important component as to the performance of firm. See also Hunt, 1974; Hatten & Patton, 1977; Porter 1980; Lahti 1983a; Cool, 1985; Killström, 1988.

<sup>44</sup> E.g. Thomas and Pollock, 1999, suggest that research should focus on several strategy levels in order to increase the understanding of strategy-performance connections.

<sup>45</sup> Fiegenbaum, Sudharsan and Thomas, 1987.

<sup>46</sup> E.g. Cool, 1985 p. 1, recommends studies, which cover several years. See also Cool and Schendel 1987; Mintzberg and Quinn, 1996; Dranove, Peteraf and Shanley 1998. Nair and Filer, 2003.

simply refused to give data, either because they were listed on the stock market, or they referred to the mutual company form or to the increasing competition.

The time period is very interesting because during the research years the FTC confronted immense competitive changes due to the de-regulative actions in the FTI. The Finnish Government made a profound decision to open the domestic market (that is local, long distance and international calls) to free competition in the beginning of 1994.<sup>48</sup> This explains why new competitors entered the market, although signs of restricted rivalry continued to prevail after the research period. It is rare that such a unique research time period can be explored, during which the environment of the firms turns remarkably fast from monopoly towards a competitive oligopolistic environment within an industry. Because it is to be expected that the strategies and performance in the FTC would be changed, the most vigorous industry and the strategic group evolution viewpoints are involved in the present study. It is to be noted that these viewpoints are not alone capable of revealing the competition, strategy and performance phenomena in the FTC after 1998. However, the focused time period of the present study will definitely show behavioural differences between the individual strategic groups and contribute to the strategy-performance dynamism studies of the firms in the future.

### 1.3. The research positioning and the methods to be followed

The positioning of the present study in relation to ontology and epistemology in the scientific philosophy is the first fundamental approach task. The philosophy of ontology asks questions concerning the nature of the reality.<sup>49</sup> The ontological engagement of the present study follows the statements of realism, which states that the world exists despite of us. Thus, the basement of the current study is reality-oriented and is interested in phenomena that exist in reality.

The theory of epistemology is interested in the origin, nature and construction of the knowledge.<sup>50</sup> The starting points of the theory of epistemology include the validity,

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<sup>47</sup> See e.g. Williams in Rumelt 1994 p.244; Thomas and Pollock 1999.

<sup>48</sup> See e.g. Häikiö 1998 p. 129.

<sup>49</sup> See e.g. <http://fi.wikipedia.org/wiki/Ontologia>. See also Patton 2002, p.95. See also Mir and Watson 2000.

<sup>50</sup> See e.g. <http://fi.wikipedia.org/wiki/Epistemologia>.

reliability of the knowledge as well as the capability to make differences between the right and wrong knowledge as the real truth is explored. The epistemological engagement position of the present study follows the recommending statements of Patton, who emphasises the common sense realism.<sup>51</sup> According to him, the research results are produced by the researchers, who cannot reach pure realism. Thus, the results must be observed critically.

The researcher is also faced with the question of the basic research method approach. Generally, four different research approaches have been applied from the basis of theoretical vs. empirical on the one hand and descriptive and normative views on the other. Among others, Neilimo and Näsi use typology, which categorises the research approach to 1) analysis of ideas 2) nomothetic 3) decision-making methodology and 4) analysis of operations research approaches.<sup>52</sup> Later Kasanen et al. redefined this categorising by adding the constructive research approach to the typology.<sup>53</sup> The very specific positioning of the present study along these categories is not possible, because several of them are included. However, the present study follows mainly the statements of constructive research approach, because on the one hand it is interested in a normative way in theory development questions and on the other hand it covers the normative empirical interest areas designed for the business managers. The present study also includes elements that belong to the theoretical concept analysis.

The relevant research approaches and methodology must be selected to solve the research problem in the best possible way. The present study calls for 'a holistic relationship' with the problem. For example, Tashakkori and Teddlie argue that pragmatically oriented researchers are moving to research designs that include several methods instead of using one method exclusively. Actually, there is an increasing tendency towards studies that use both quantitative and qualitative methods.<sup>54</sup> In the current study, the research design is based on many data sources and quantitative and qualitative analysis methods. For example, the firm performance is explained by quantitative data analyses, such as multivariate statistical methods in order to define the connections to the strategies followed.

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<sup>51</sup> Patton 2002, p.95.

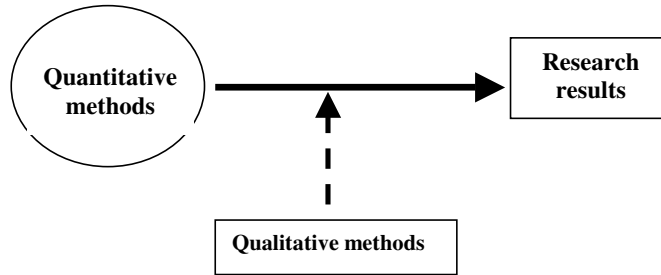
<sup>52</sup> Neilimo and Näsi, 1980.

<sup>53</sup> Kasanen et. al. (1991)

<sup>54</sup> Tashakkori and Teddlie, 1998, pp.3-4 describe the history and attempts to make "peace on the battlefields" of the constructivism (qualitative) and positivist (quantitative) research methods.

By using qualitative methods the results of the quantitative methods can be supported. This is illustrated in Figure 1.2.<sup>55</sup>

Figure 1.2 The qualitative and quantitative method roles of the present study



The quantitative methods are the dominant design elements in the present research. Large and versatile quantitative data has always been utilised as the relevant data is available and the quantitative data analyses, e.g. multivariable statistical methods, are involved as the critical strategy and performance elements of the strategic groups are explored. The interpretations of the quantitative results are supported by the qualitative data such as interviews of experts and managers in the FTC. This is intended to avoid wrong interpretations, which might appear due to the complex and holistic nature of the research problem and some missing quantitative data.

The current research follows the deductive research logic. With regard to the positioning, it follows the statements of postpositivism, which uses primarily quantitative methods. The findings are expected to be objectively “true” and the subjective values of inquires controlled. Critical realism and some lawful, reasonable stable relationships among the phenomena are the grounds of this research, although they may be known imperfectly.<sup>56</sup> The findings and statements of the SG-discipline are a particular source of prediction, which assumes that the strategy-performance connections are different between the strategic groups in the FTC.<sup>57</sup> The managerial approach is also included, because the focus is on the

<sup>55</sup> See the illustration of scenarios for combining qualitative and quantitative methods constructed by Ulin P., Waszak, C., and Pfannenschmidt, S., 1996, referred in Tashakkori and Teddlie, 1998, pp.44.

<sup>56</sup> Tashakkori and Teddlie 1998 p. 23, describe that most often four paradigms, that is positivism, postpositivism, pragmatism and constructivism, have been used in the social and behavioural sciences.

<sup>57</sup> Tashakkori and Teddlie, 1998, p.25 argue that inductive logic may also be found in deductive logic research and vice versa. The deductive mode predicts outcomes that are supposed to occur in theoretical population.

results of business and functional strategy levels, where managers confront the important strategy decision arena and competitive environment most often, and where managers are obliged to understand the business strategy totality despite e.g. missing information. Thus, most of all the present study aims to understand the strategy-performance connections, which is different approach compared to the direct explanation approaches.<sup>58</sup>

Furthermore, the likes of Thomas and Venkatraman argue that the operationalisation of the strategy is critical to the measurement. That is why they have categorised the SG-discipline studies along two dimensions: *a priori* and *a posteriori* studies on the one hand and ‘narrow’ and ‘broad’ operationalisation of strategy on the other hand. The ‘narrow’ approach focuses on only one functional dimension, while the ‘broad’ approach includes multiple functional dimensions representing multidimensional strategy decisions.<sup>59</sup> A *posteriori* classification means that the strategic group clustering criteria are defined afterwards through analysis processes. There are, however, examples of processes that yield occasional results and do not produce relevant results.<sup>60</sup> Finally, *a priori* means that in the research the defining strategic group criteria is set beforehand.

Table 1.2 concludes the positioning of the present study in the strategic group research classification discussed above.

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<sup>58</sup> Thomas and Venkatraman, 1987. See more of the intentional explanation and understanding research approaches in Uusitalo (1991) pp. 105-109.

<sup>59</sup> Thomas and Venkatraman, 1988, p. 539-540. See also Hofer and Schendel, 1978

<sup>60</sup> Dranove, Peteraf and Shanley, 1998, warn the complexity of inter-industry measures in strategy research, abstract models, unmeasured information and spurious correlation.



advanced theoretical strategy-performance model of the firm and introducing a new resource based barrier in the context of the SG-discipline. The object of the empirical part is to theoretically show the relevance of the advanced strategy-performance model and the new resource based barrier in the strategy-performance connections and among the Finnish Telephone companies.

The well-specified strategy-performance research problem, the careful selection of the variables, and the use of rigorous analyses is expected to ensure relevant and interesting contributions. As mentioned, the present research aims to contribute to the strategy-performance theories and empower the managers' strategy planning and implementation tasks. The holistic approach will help us to understand that the industry structure and the relevant strategy-performance model applied in the individual firms are also important elements in explaining the strategy-performance connections of the firm.

With regard to competitive industry structures, this study strengthens and enriches the previous theoretical and empirical SG-discipline research results with a new industry in focus. The research results will recommend that the total industry can reasonably be clustered into strategic groups - taking into consideration the most relevant competitive environment and resource source views, as the performance of the firm is explained by the strategy followed. The strategic group clustering is based on the resources of the firm, which, according to the strategy management literature, are the sources of entry, exit and mobility barriers. However, these barriers do not alone cover sufficiently the totality. Thus, the current concept of barriers will be specified with a new barrier, which focuses on the strategy implementation that is the exploitation of the market potential.

The holistic strategy-performance frame model was first presented by Lahti.<sup>62</sup> Because the relevance of the strategy-performance model will be of great importance in the present study, the frame model will be developed further. The conceptual roles of effectiveness and efficiency will be specified from the basis of strategic choices and strategy implementation. An effort will be made to define the roles of the different level strategic barriers. These specifications will fulfil the existing strategy-management conceptual shortages in barrier

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<sup>62</sup> Lahti, 1983a.

concepts. The strategy-performance frame model will be further increased by the strategy implementation processes, the results of which are estimated by the market and the personnel of the firm.

Most previous strategy-performance researches have focused on a very limited number of views in trying to simplify the explanation of the performance of the firm. In reality the strategy is, however, a more complicated issue. The many dimensional analyses and research areas of the present study show that several views are relevant - almost unavoidable - as the strategic core construction in the performance of the firm is completed. Thus, this study aims to significantly raise the research ambition level.

The longitudinal approach of the present study in a considerably changed competitive environment - from monopoly to oligopolistic competition – aims to reveal differences in the strategic intention and the resource allocation dynamism between the strategic groups. The competitive changes actually do not confront all the strategic groups in similar ways. Nor is the response to these changes similar between strategic groups. The dynamism will also be seen in the strategic behaviour and performance of the best and worst performers in the strategic groups, as a sign of the strategic group evolution. All these results unite the statements of the BP (individual firm) and IO traditions (industry structure) and the SG-discipline (strategic group) and give views to future strategy-performance research.

In the conclusion of the theoretical part, the advanced strategy-performance model, which will be developed, will be positioned into the industry and strategic group context. The model aims to improve the understanding of the connection of the major research concepts, as the performance of the firm is explained. Thus, the present study aims to develop the statements by connecting the core arguments of the BP tradition and the SG-discipline. The roles of the firm and industry structure based views will have a clear task in the strategy-performance explanations.

In addition to the several theoretical statements highlighted above in this study, the additional empirical aim is to provide new views to managers' strategic decisions and the ways to perform relevant activity patterns needed to gain better performance. All in all, the empirical contribution is versatile because all the Finnish telephone companies are involved



in this kind of holistic research for the first time. Actually, the previous international studies of telecommunications industries have focused on narrow strategy-performance themes.

The empirical results of this study concerning the scope and the resource allocation, logistics and marketing, the strategy implementation process, and finally economic performance are expected to show clear and relevant differences between the strategic groups - and the best and worst performing individual firms as well. Thus, by focusing on strategic group clustering and the resource-based barriers, the viability of general industry level interpretations are avoided, and managerial detailed strategy decisions can be contributed through the development of the theoretical views.

### 1.5 The outline of the study

The first chapter has introduced the research objective and the scope of the study. This research is continued with an overview of relevant literature in the second chapter, where the theoretical strategy-performance framework is discussed. The promising SG-discipline is very much in focus. The discussion proceeds from an industry perspective examination to the intermediate strategy-performance level and finally to the resource allocation and the performance of the firm. The definition of a strategic group is discussed thoroughly, because of its dynamic role in strategy-performance design and competition protection for group members. The theoretically valid and relevant frame model is presented and discussed. The emphasis is on a closer detailed observation on the aspects pinpointed by the strategy management literature. The main idea, however, is to encourage discussion in favour of a holistic advanced model in explaining the performance by the strategy followed. The second chapter also reaches conclusions of the theoretical part within the theoretical frame of reference.

The empirical part of this research begins in the third chapter with the presentation of the FTC that form the major part of the total FTI. The presentation is concentrated on the competitive industry structure, the de-regulative actions, typical features of the resource allocation, and key figures of the product market.

The overall and detailed research design is presented in the fourth chapter. It contains the presentation of the advanced strategy-performance model with its variables for the specification of empirical research work. In the same chapter, the definition of strategic groups is motivated and data gathering sources and analysis methods are presented. Finally, the validity and reliability is proven.

The research results are presented in the fifth chapter. Firstly, the development of the key features of the environment potential, resource allocation and performance of the strategic group members are presented including the results of the market research performed within the firm's market. The results of the principal component analysis in different strategic groups are then presented to show the constructions and differences between strategies and performance of the strategic groups. In addition, the strategies and performance of the best and worst performers in the strategic groups are presented in order to show the dynamic nature of strategies on the firm level.

The final chapter focuses on the theoretical discussion and implications. Theoretical implications are presented and connected to the results of the earlier strategy-performance research. The managerial implications are also presented. Finally, suggestions for further strategy management research are expressed.

## II THE THEORETICAL PART

### 2. THEORETICAL BACKGROUND FOR THE CONNECTIONS BETWEEN THE FIRM'S STRATEGY AND ITS PERFORMANCE

The purpose of this chapter is to examine the arguments relating to the links between the firm's performance and its strategy, as presented in its strategy management literature. For the purposes of this study the definition of the word "strategy" must, however, be discussed first.

#### Strategy definition

As noted in the introduction to this study, the concept of strategy has been defined in many ways depending on the purposes of the research.<sup>63</sup> Chandler defined strategy as including long range goals and objectives, as well as the activities and the allocation of resources devoted to the firm's objectives.<sup>64</sup> According to Ansoff strategy includes the product market scope, the direction of the growth vector and the competitive advantage and synergy of the firm, which refers to its ability to enter the market.<sup>65</sup> Hatten and Schendel argue that strategy is a firm-specific process, which includes analyses of its environment, the identification of its capabilities and resources, the estimation of market possibilities and the risks involved in strategy, and the allocation of resources to exploit the potential of the market.<sup>66</sup> Bourgeois defines strategy as "domain selection and navigation" for the development of the enterprise.<sup>67</sup> According to Lahti, the core of the strategy lies in the factors which will help the company perform well in the present and future competitive environment.<sup>68</sup> Nelson defines strategy as a set of resource commitments that define objectives and that serve to rationalise future decisions.<sup>69</sup> Porter states that a successful strategy includes an internally-consistent set of goals and policies, the alignment of the firm to its environment, and the focus on the creation and exploitation of its competitive

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<sup>63</sup> See e.g. Mintzberg, Ahlstrand and Lampel, 1998

<sup>64</sup> Chandler, 1962.

<sup>65</sup> Ansoff, 1965, p. 100. See also Ansoff, 1975.

<sup>66</sup> Hatten and Schendel, 1976.

<sup>67</sup> Bourgeois, 1980.

<sup>68</sup> Lahti, 1987, p.44.

<sup>69</sup> Nelson in Rumelt, 1994, p.247.

advantage.<sup>70</sup> Finally, Mintzberg and Quinn argue that the strategy of the firm is about following key concepts, which create cohesion in balance and focus for its economic development.<sup>71</sup>

The definitions above include opinions concerning the environment of the firm, elements to be included in the strategy, and the process by which the strategy of a firm is created. The present study focuses on the realised of the strategy through its structure and substance composition. In the present study the structure of the strategy includes firstly 1) the scope and resource elements, which show the main strategic choices of the firm and secondly 2) the elements which are needed to exploit its market potential. The substance of the strategy includes the resource configurations, by which synergy is created, and the patterns of activity by which competitive advantage is finally constructed to gain economic performance.

#### Oligopolistic theory as the research perspective

The definitions contained in oligopolistic theory are implicitly included in the theoretical background perspectives of the current study. The theory of oligopoly argues that the competitors in the market are dependent on each other and the activities of the individual firms have effects on the activities of the rest of the firms in the market.<sup>72</sup> However, the statement that competitors have homogenous products is often without a solid basis in reality. Thus, in the strategy management research, there has been an increasing interest in differentiated products in the context of the heterogeneous competitive market.<sup>73</sup> The mutual dependency of the firms in the oligopolistic competitive environment is also one of the strong elements in the SG-discipline development, and can also be seen as an elementary part of the managerial strategic evaluation work described in BP tradition.<sup>74</sup> Thus the attention will now turn to the statements of BP tradition and SG-discipline.

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<sup>70</sup> Porter in Rumelt, 1994, p. 425-426.

<sup>71</sup> Mintzberg and Quinn 1996

<sup>72</sup> Fellner 1960 s.15. See also Fergusson C. E. and Gould J. P., 1975.

<sup>73</sup> See e.g. Lahti 1992, p.17 and Lahti 1999 p.56.

<sup>74</sup> E.g. Porter, 1978, pp.106-109 and Porter 1979, pp. 217-218, emphasises the role of the oligopolistic theory in the development of SG-discipline.

## 2.1. Approaches to the Business Policy and Industrial Organisation Economics traditions

The advantages of the individual firm and total industry approaches towards the strategy and performance of the firm, BP- tradition and IO –tradition, especially its enlargement SG-discipline, are discussed next.

### Business Policy tradition (BP)

From the two tradition perspectives selected, BP is interested in establishing the reasons why some individual firms achieve better economic performance with their strategies than other firms with their strategies within the same industry. The tradition focuses on the alignment of processes between the competitive environment and the organisation of resources allocated within a firm, which refers to the strategy selection and implementation processes.<sup>75</sup> Thus, the strategic behaviour of the organisations and managers play a major role in explaining the performance by the strategies followed in BP tradition.

The early roots of BP research tradition can be traced back over 100 years.<sup>76</sup> Later BP was influenced considerably by the ideas of the research traditions of behavioralism and managerialism.<sup>77</sup> It acquired, however, a solid basis in research only after Chandler's 'Strategy and Structure', which argues that the strategies and long term performance goals of the firm can be identified by the resource allocation followed.<sup>78</sup>

The early arguments for BP were influenced by behavioralism and managerialism. Behavioralism argues that the different objectives of the interest groups in the firm play an important role in the formulation of strategy and, thus have a strong impact on the performance of the firm. Actually, the strategy of the firm is the result of the power of the dominant interest group. This tradition, however, ignores the competitive environment of the firm. From this basis, managerialism has developed the understanding of the strategy-

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<sup>75</sup> Barney 1996, p. 17. See also Chandler, 1962; Ansoff, 1965; Rumelt, 1974; Hatten, Hatten and Schendel, 1977; Hofer & Schendel, 1978; Cooper, 1978; Quinn, 1980; Porter, 1980; Lahti, 1983a; Mintzberg 1996.

<sup>76</sup> Rumelt, 1994, reports that strategy management tradition, also called Business Policy tradition, began from Warton School in Pennsylvania. Rumelt, Schendel and Teece, 1994 pp. 10-25, describe the development of BP tradition from the days of Taylor, 1947, Chandler, 1962 and Ansoff, 1965, through Hatten and Schendel, 1977. See also Learned et. al., 1965; Porter, Rumelt and Mintzberg, 1998.

<sup>77</sup> Behavioralism: see e.g. Cyert and March, 1963 and managerialism: e.g. Chandler 1962.

performance connections of the firm by arguing further that managers' personal objectives formulate the firm's objectives in relation to the uncertain competitive environment.<sup>79</sup> According to managerialism, managers allocate the resources of the firm according to their own preferences in order to keep the owners of the firm satisfied.<sup>80</sup> If the competition is not keen enough, managers may choose "an easy way of life".<sup>81</sup> Managerialism argues strongly that resource allocation in the individual firms has to be studied if the performance of the firms is to be explained.

It was as late as in the 1970's and early 1980's, when Ansoff took remarkable steps in BP tradition by explaining and measuring the connections between the strategy and the performance of the firm.<sup>82</sup> He states that the portfolio of resources within a firm is mobilised to carry out business activities, which aim to exploit market opportunities. Thus, BP tradition unites the resources to the strategy and the performance of the firm. In addition, BP tradition clearly tries to match together the changing environment conditions with the strategy and the organisational capabilities of the firm.<sup>83</sup>

Because of the complex competitive environment with the increasing number of relationships inside and outside firms, BP stresses especially the managers' important role in decision-making and in the implementation of strategy.<sup>84</sup> For example, Chandler, Ansoff, Snehota and Lahti argue that the managers in firms have the greatest impact on strategy and performance, and they change organisations to support their planned organisational goals.<sup>85</sup> Lahti argues that managers acquire resources and produce firm-specific activity patterns for resources according to their own judgements and beliefs. These patterns create the strategy, which integrates organisation goals and actions into a cohesive entity.

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<sup>78</sup> Chandler, 1962, p. 15; Ansoff, 1975. Snehota 1990 p.14, argues that managers choose a structure that enables them to pursue the strategy they have chosen. Chandler's argument 'Structure follows Strategy' is, however, an oversimplified description of the connection between the strategy and performance of firm.

<sup>79</sup> Cyert and March, 1963; Fellner, 1960; Cohen and Cyert, 1975; Lahti 1985.

<sup>80</sup> Cyert and March, 1963, pp.239 and chapter 9; Gravelle and Rees, 1985, p.356; Williamson 1970 p.77, 1975, 1985 and 1991.

<sup>81</sup> Lawrence and Lorsch, 1967.

<sup>82</sup> E.g. Ansoff, 1975.

<sup>83</sup> Snehota 1990, p. 142; Barney, 1997.

<sup>84</sup> See e.g. Ansoff, 1965; Lahti, 1985; Thomas and Venkatraman, 1988; Dierickx and Cool, 1989; Porter, 1996; Barney, 1997, pp.27-28, argues that strategic management is the process through which strategies are chosen and implemented; See also Peteraf and Shanley, 1997; Ruefli and Wiggins, 2003.

Strategic decisions are not generated by any automatic “machine” in the firm. It is the managers as human individuals with their special skills, experience and expectations regarding the firms who are the reason why the strategies and performance of the individual firms finally differ from each other. It is evident that managers in different firms are able to allocate resources in different ways.<sup>86</sup> For example, Thomas and Pollock argue that *‘the rate and direction of a firm’s growth is influenced by how management conceptualises the firm’s resource base. The internal choices and resource interact with the competitive environment to determine the firm’s economic performance.’*<sup>87</sup>

The quotation above parallels the tenets of BP, which states that resource allocation in proportion to the competitive environment is an essential explanatory element as the performance of an individual firm is explained. Resources have gained increasing attention among strategy management researchers. Most notably, Resource Based View (RBV) strongly supports the important role of resource allocation as the main source of the performance of a firm. Resource based view is applicable in different strategy-performance research views, because resources create possibility frames for means to exploit market potential.<sup>88</sup> According to RBV, the competitive advantage is provided by distinctive valuable individual firm-level resources that competitors are unable to reproduce.<sup>89</sup> This is despite Makhija’s argument that RBV is introspective in its nature, in contrast to the Market Based View (MBV), as it looks mainly towards the resources available to the individual firm.<sup>90</sup> However, MBV also takes into consideration the environment in which the firm tries to gain economic performance.<sup>91</sup> Thus, the statements of RBV complete the analysis of strategy and have an increasing influence within the BP tradition.

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<sup>85</sup> Lahti 1983b, 101 See also Chandler, 1962, p. 15; Ansoff, 1975. Snehota 1990 p.14.; Mintzberg and Quinn, 1996; Mintzberg et al. 1998. Hofer and Schendel, 1978; Porac, 1989; Adner and Helfat, 2003 argue that strategic decisions do not emerge from dis-embodied processes.

<sup>86</sup> Hambrick, 1989, p.5, argues that different firms prefer different strategy implementation options. See also Hatten, Schendel and Cooper, 1978; Majumdar, 1998

<sup>87</sup> Thomas and Pollock, 1999, p. 134; See also Porter, 1991; Dranove, Peteraf and Shanley, 1998.

<sup>88</sup> Schendel and Hofer, 1979; Wennerfeld, 1984; Lahti, 1985; Mahoney, 1992; Amit and Schoemaker, 1993; Barney in Rumelt, 1994; Porter in Rumelt, 1994; Oliver 1997; Dranove, Peteraf and Shanley, 1998; Mehra and Floyd, 1998; Thomas and Pollock, 1999. Sales volume has also been used as clustering surrogate of resource size. See e.g. Cool and Schendel, 1988. Fiegenbaum and Thomas, 1990.

<sup>89</sup> Makhija, 2003 p. 439, argues that MBV focuses outside on the market. See also Barney, 1986 and 1991; Prahalad and Hamel 1990; Mahoney and Pandian, 1992; Peteraf, 1993. Porter in Rumelt 1994, p.446, states that RBV is a collective theoretical advantage from many sources.

<sup>90</sup> Makhija, 2003

<sup>91</sup> Porter in Rumelt 1994 stresses the role of internal resources for economic models and strategy researchers. See also Wennerfeld, 1984; Barney, 1991; Amit and Schoemaker, 1993; Peteraf, 1993.

As noted earlier, BP takes the research view of the individual firms as performance is explained by the strategy followed. It is strongly assumed that the competitive environment also has an influence on the performance of the firm. For example, Ruefli and Wiggins argue that "*IO presupposes a ceteris paribus world view in regard to firm performance, BP presumes a mutatis mutandis model.*"<sup>92</sup> In order to evaluate these statements in the relevant competitive context, the SG- discipline is examined next. Thus, the presentation continues with IO tradition, which is the basis of the strategic groups.

### The tradition of Industrial Organisation Economics tradition (IO)

The IO strategy-performance research tradition is rooted in the traditions of classical and neo-classical economics, which concentrate on the relationships between market structure, firm production and performance.<sup>93</sup> The IO perspective explains the strategy performance of the firm by focusing on the competitive market industry structures and the competitive position of the firm on the product market. This is opposite to the firm level internal conduct-performance typical to BP.<sup>94</sup>

The IO researchers argue that market structure and the competitive environment as a whole is the key variable, which determines the firms' strategic behaviour and performance gaining on the market and the industry dynamics follows a stimulus-response model, the so-called Structure-Conduct-Performance (S-C-P) model.<sup>95</sup> In other words, the firms in an industry are homogeneous in terms of the competitive threats and opportunities which they face, and a favourable industrial environment is the basis for performance.<sup>96</sup> IO suggests, however, that the proportional size of the firm is an important determinant affecting the

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<sup>92</sup> Ruefli and Wiggins, 2003, p. 864; *ceteris paribus* = with all other factors remaining the same; *mutatis mutandis* = the necessary changes having been made.

<sup>93</sup> See e.g. Bain, 1979; Caves, 1977; Scherer, 1980.

<sup>94</sup> Barney 1991, argues that IO tradition focuses on the industry as a whole. See also Möller in Näsi 1991 p. 203. Makhija, 2003 p. 436-437.

<sup>95</sup> See 'Bain-Manson' or 'Structure-Conduct-Performance' model e.g. Scherer, 1980, p. 4. See also Bain, 1979; Caves, 1977; Caves and Porter, 1977 and Caves and Porter 1978; Porter, 1979. Barney 1991 and Barney 1997. Thomas and Pollock, 1999. Also Makhija 2003, 436-437, argues that in the area of strategic management IO uses industry characteristics to explain differences in the profitability of firms.

<sup>96</sup> See e.g. Caves and Porter 1977 p. 250; Porter 1979, p. 214. Barney: 1997, p. 125; Snehota, 1990, p. 108, states that "*The concentration on the supply side and the relative size has been the main feature of the structure dealt with by IO.*" Makhija, 2003 p. 436-437, argues that a favourable industrial environment creates the profitability of the firms in the industry.



firm performance. The competitive environment of the firm is seen to be transparent, objective and is known to managers.

Arguments against the argumentation of the IO can be expressed, despite its progress in the strategy-performance research results. According to several research results, market structure does not itself cause a firm's strategy, or vice versa.<sup>97</sup> Obviously, the competing firms differ in many ways from each other within the industry. They have also different competitive starting points.<sup>98</sup> Actually, it is just the heterogeneity between firms on the market which explains the performance differences between firms. These differences are not explained thoroughly by conventional assumptions of economic theory, which is mostly interested in business enterprises as a collective entity and not the individual firms.

Later, IO turned S-C-P model upside-down by focusing more on the firms in the market. It began highlight the strategy variables, which influence competition within an industry, such as market, products, marketing and production, which either prevent or facilitate the competition between parties in the market, and thus determine how firms behave in a competitive environment.<sup>99</sup> Therefore, the firms analyse the industry and market structures and identify their resources to exploit market potential in the best possible way.<sup>100</sup>

Further, criticisms of IO tradition can be made because it ignores the managers' central role in strategic decision making. For example, Snehota points out that, in many cases, the primary focus has been only on the explanation of "technical" mechanisms, through which business behaviour is generated.<sup>101</sup> However, managers ultimately define the firm's relationship with the environment, for example, by searching for and identifying opportunities for improvements in performance. If the structure of the industry alone could explain both the strategy and the performance of a firm, there would be no need for separate diversified managerial decisions with respect to strategy.

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<sup>97</sup> Miller, 1987

<sup>98</sup> Rumelt, 1994 p. 43.

<sup>99</sup> Porter, 1981; Christensen and Montgomery, 1981.

<sup>100</sup> Porter, 1980, 1985; Rumelt 1984. Strategy researchers have used the model as a way to describe the attributes of an industry which make it "less perfectly competitive", and help firms find ways to obtain above-normal economic performance. Barney 1996, p. 68.

<sup>101</sup> Snehota 1990, pp. 3-4.

Despite the shortcomings of IO perspectives, it has taken significant steps towards competition realism. Instead of arguing that only the structure of an industry determines its performance, it assumes that, within an industry, the existence of competition provides it with opportunities to be taken. Especially, the enlargement of IO, the SG-discipline, demonstrates that there are firms in the market which behave and perform similarly, compared to other firms in the same strategic group within the same industry. The SG-discipline argues that the strategic group, rather than the total industry, is the most appropriate strategy-performance analysis unit. Thus, the SG-discipline reveals new approaches, which will be examined next.

## 2.2. From industry examination to the strategic group analyses

As we have noted, the enlargement of IO is focused on clusters inside the industry, allowing it better to explain the strategy performance connections of the firm.<sup>102</sup> The SG-discipline argues that industry is not a homogeneous unit, but consists of one or more strategic groups. Each of them consists of one or more firms which conduct strategies with similar dimensions. The basic idea of the SG-discipline is to find concepts, which are applicable with similar analogies both in the analyses of industry structure and in the strategic groups.<sup>103</sup> It also aims to improve the understanding of the strategy-performance connections of the firms in the most relevant competitive environment.<sup>104</sup>

### 2.2.1. The fundamental arguments of the strategic group discipline

Hunt introduced the new grouping concept in order to understand better the connections between the competitive environment, strategic behaviour and performance of firms within the industry.<sup>105</sup> He applied the IO structural perspective in his household appliance industry research. However, the asymmetrical strategy results between firms did not support the arguments of IO tradition. Some of the firms followed very different strategies compared

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<sup>102</sup> E.g. Greening, 1984 argues that the poor industry level performance explanation power result is due to the strategic groups' existence.

<sup>103</sup> Barney 1997, p. 127.

<sup>104</sup> E.g. Gordon and Milne, 1999.

<sup>105</sup> Hunt 1972

with other firms in the same market. This inspired Hunt to classify the firms into homogenous industry subgroups by their value-adding chain. Consequently, he introduced the definition "strategic group" and referred to firms which display similar conduct along key strategic dimensions and are different from firms outside the strategic group.<sup>106</sup> Many empirical results have later revealed great strategy and performance heterogeneity among the individual firms inside industries.<sup>107</sup>

Hunt's "inconsistent" enlargement of IO started the SG-discipline research discussion.<sup>108</sup> Later, Porter has enlarged the argumentation by stating that individual strategic group members face similar threats and opportunities in the competitive market.<sup>109</sup> In addition, Lahti as well as Thomas and Pollock have specified the definition of similar resource configurations as a precondition for pursuing similar strategies and gaining similar performance within the strategic group.<sup>110</sup> The resource configuration creates protective barriers around the strategic group. The strategic behaviour and performance of the members of a specific strategic group are very homogenous compared to each other, and this heterogeneity prevails between the different strategic groups in the same industry.<sup>111</sup> The industry may consist of several or only one strategic group. In these strategic groups, there may be one or several members.<sup>112</sup>

The SG-discipline argues that behaviour of the firms influences the structure and performance of the industry totality and the strategy and the performance of each firm within the strategic group.<sup>113</sup> Because the SG-discipline turns the research focus more on the individual firms, it fills the conceptual strategy-performance shortage by explaining the intermediate space between the industry and the individual firms.<sup>114</sup> For example, Thomas

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<sup>106</sup> Hunt's categories were 'full line national manufacturers', 'part line manufactures', 'private brand producers' and 'national retailers'.

<sup>107</sup> Hatten and Schendel, 1977; Caves and Porter, 1977; Hatten and Schendel, 1978; Hatten, Schendel and Cooper, 1978; Schendel and Patton, 1978; Porter 1979; Lahti 1983a; Cool and Schendel, 1987; Killström, 1989; Fiegenbaum and Thomas, 1990.

<sup>108</sup> Thomas and Venkatraman 1988, Thomas and Pollock 1999.

<sup>109</sup> Porter, 1979; Caves and Porter, 1977; MacGee and Thomas 1986.

<sup>110</sup> Thomas and Pollock, 1999.

<sup>111</sup> Frazier and Howell, 1983; Hatten and Hatten, 1987; Thomas and Venkatraman, 1988; Smith, Grimm, Wally and Young, 1997; Gordon and Milne 1999. They all have same basis of defining strategic groups.

<sup>112</sup> See e.g. Hinterhuber and Kirchberg, 1986, p. 96, who studied the strategic group variation in industries.

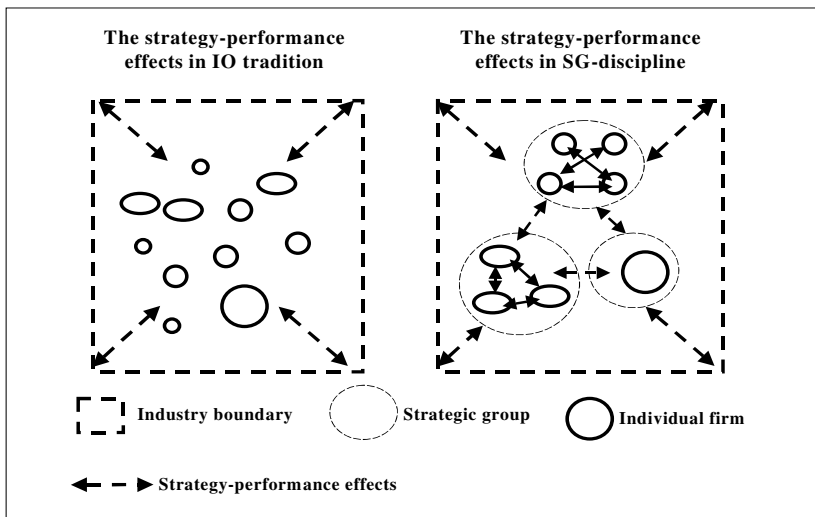
<sup>113</sup> Thomas and Pollock, 1999

<sup>114</sup> E.g. Porter, 1976; Porter and Caves, 1977; Lahti, 1983a; Barney and Hoskisson, 1990; Barney, 1997, p.126; Gordon and Milne, 1999. Wiggins and Ruefli, 1995 even suggest abandoning the strategic group concept in favour of firm analysis.

and Venkatraman argue that the complete understanding of competition is possible only when the reciprocal links between the firm-level strategies and the strategic group-level structures and effects are covered.<sup>115</sup> These strategic group effects may be the consequence, for example, of the interaction between managers in the different strategic groups. Porter even states that industry-wide inferences can not be made when strategic groups characterise competition.<sup>116</sup> Figure 2.1 summarises the main differences between the IO and the SG-discipline with regard to their perspectives on the influences of strategy and performance of the firm.

The arrows in Figure 2.1 illustrate the industry, market and competition effect on both the strategy and the performance of the firm. IO argues that the similar effects on firm strategy and performance are due to the competitive structure of the industry as a whole, which also means that all the firms in industry compete with each other. The SG-discipline states that also the strategies of the homogeneous firms in the strategic groups have an impact on the competitive performance of the whole industry and on the performance of the individual firms within the specific strategic groups.<sup>117</sup>

Figure 2.1 The strategy-performance effect differences in IO and SG-discipline



<sup>115</sup> Thomas and Venkatraman, 1988, p. 541. See also Dranove, Peteraf and Shanley, 1998.

<sup>116</sup> Porter, 1976. Porter and Caves, 1977

<sup>117</sup> Porac, 1989.

The arrows in the right box in Figure 2.1 illustrate that there exist important strategic interactions between strategic groups, which have effects on the strategies and the performance of the individual strategic groups. Dranove, Peteraf and Shanley show examples of these relationships, which have effects on effectiveness and efficiency within the strategic groups.<sup>118</sup>

The structure of strategic groups emerges from the strategies of the individual firms. Whenever a strategic group consists of several strategic group members, differences in resource allocation and performance may occur between them.<sup>119</sup> These also have direct effects on the rivalry and performance of the strategic group members, and indirectly through the behaviour of the strategic groups on the total industry.<sup>120</sup>

Due to market needs, competition, and the availability of resources, the individual firms develop their strategic behaviour, and may move from one strategic group to another. The number of strategic groups and the number of group members within the strategic groups may vary over time. Thus, the SG- discipline also responds well to the challenges of the changing competitive structures and evolution within industries.

The SG-discipline states that the industry as a whole, the individual strategic groups, and the firms in the strategic groups all try to conduct strategies which have the most promising performance expectations. Thus, they protect themselves from outside competition by establishing isolating mechanisms –that is protective barriers- against competitors who are planning to enter the industry, or some of the strategic groups, or to imitate the strategies of the individual firm.<sup>121</sup> Thus, the industry and strategic group members try to preserve imperfectly competitive conditions and stability over time by increasing the investment costs of entry for competitors from outside, because high barriers implies less competition

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<sup>118</sup> Dranove, Peteraf and Shanley, 1998: The activities, such as prices, alliances, group level processes and, joint projects, of one member can affect the outcomes of other mutually dependent group members.

<sup>119</sup> Cool and Schendel, 1988, p. 209. See also McNamara, Deephouse and Luce, 2003, who have found performance differences within strategic groups. *See also* Hawawini et. al. 2003.

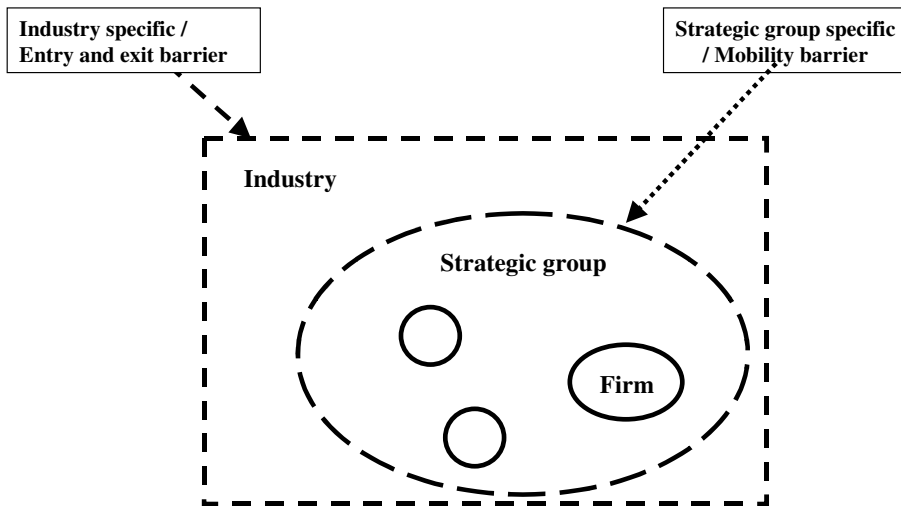
<sup>120</sup> See Caves and Porter, 1977; Porter, 1976 and 1979; Cool and Dierickx, 1993.

<sup>121</sup> Several isolating mechanisms have been identified: economies of scale, economies of experience, proprietary knowledge, buyer switching costs, contractual arrangements, buyer evaluation costs, reputation, trade marks, privileged resource access, capital availability. See e.g. Porter, 1980; Rumelt, 1981; Thomas and Venkatraman, 1988; Barney 1997; Caves and Ghemawat 1992, p. 210. McGee and Thomas, 1992, p.84-85. Lahti, 1999, p. 62-63.

and, consequently, better performance in the long run.<sup>122</sup> Thus, the uncertainty of the environment is also reduced.<sup>123</sup>

The SG-discipline refers to the existence of entry and exit barriers and strategic group mobility barriers in industry. Entry barriers protect the industry from the competition of firms outside the industry. According to the definition of Caves and Porter, mobility barriers are: “*structural forces impeding firms from freely changing their competitive position*”.<sup>124</sup> Figure 2.2 shows the relationships between these different barriers.

Figure 2.2 The strategy-performance barriers in the industry



The origin of protective entry, exit and mobility barriers lies in the resources of the firms.<sup>125</sup> The resource commitments, especially to durable, specialised, sticky resources, have an important role for the firm's performance, because new entrants have to pass through similar investment and implementation procedures, which the firms behind the protecting

<sup>122</sup> Dranove, Peteraf and Shanley, 1998; Makhija, 2003 pp. 436-437.

<sup>123</sup> Ansoff, 1975; Snehota, 1990; Mahoney, 1992; Carroll in Rumelt, 1994; Collins and Montgomery, 1995; McGee, 1996; Porter, 1996.

<sup>124</sup> Caves and Porter, 1977, p.246.

<sup>125</sup> Barney 1997 p. 73 points out that structural barriers exist, which are independent of market factors such as access to resources, proprietary technology, legislation, economies of scale, know how, access to raw materials, geographic locations, and learning-curve cost advantages.

barriers have already done.<sup>126</sup> These will cause costs to rise above the barriers. The more an entering firm has to adapt of the strategies of the new industry or the new strategic group, the more it will incur switching costs. This is because of inevitable resources to be acquired, which actually define the scope of the strategic group and the scope for firms.<sup>127</sup> The switching costs are reasons why short-term losses appear to be associated with the change of strategic group.<sup>128</sup> Also, the exit from the industry or the strategic group is costly.

The industry entry barriers stand for those cumulative resource allocation configurations created by the strategic groups, and the firms within an industry as a whole, by differentiating the industry from any other industry. The industry level barriers, however, include some blurring effects, which decrease the ability to identify the most relevant strategy-performance connections. This is because the entry of the industry newcomers will take place in some of the individual strategic groups inside the industry, and the firms trying to enter the industry will encounter the strategic mobility barriers which have accumulated over time.

The entry barriers do not protect the firms from the competitors inside the industry. The mobility barriers represent the allocation of resources, which the members of the strategic groups have committed, and differentiate the strategic groups and their members from the other strategic groups in the industry.<sup>129</sup> These intra-industry mobility barriers create specific performance possibilities by protecting the strategic group members from the competitors in other strategic groups.<sup>130</sup> They also reduce the attempts of the firms to change their strategic group, because of the investments expected in the new strategic group. Thus, industry evolution can be witnessed in the changes of the mobility barriers among strategic groups.<sup>131</sup>

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<sup>126</sup> Cool and Schendel, 1988 p.207; Caves and Ghemawat, 1992.

<sup>127</sup> Porter, 1980.

<sup>128</sup> Porter, 1980; Oster, 1982; Caves and Ghemawat, 1992. Hatten and Hatten, 1987, argue that innovators, who successfully change industries, manage to create high barriers against competition.

<sup>129</sup> Cool and Schendel, 1988 p.207; Dranove Peteraf and Shanley, 1998.

<sup>130</sup> Makhija, 2003, pp. 436-437, argues that high bargaining power barriers within the industry relative to suppliers and customers suggest that the high performance is expected.

<sup>131</sup> Caves and Porter, 1977; Cool and Schendel, 1988 p.207; Caves and Ghemawat, 1992; Bogner, 1993; McGee, Thomas and Pruett, 1995; Thomas and McGee, 1996; Barney 1997 p. 70; Barney, 1997, p. 69-132; Nelson in Rumelt, 1994, p. 263 describes barriers, which a strategic group entering firm may meet. Porter 1979 and 1980, states that the origin of the mobility barriers may be in economics of scale, product differences, cost advantages, contrived deterrence or exogenous sources such as e.g. governmental regulation.

As the industry level and entry barriers are an accumulation of 'several competitive environments' of firms situated in several strategic groups, the mobility barriers as 'boarders' of strategic groups grow in importance in the explanation of strategy-performance connection. Through the mobility barriers, it is convenient for managers to evaluate strategy-performance possibilities. The mobility barriers also create better possibilities for measuring the relative strategic conduct of the firms in an industry, on the business level.<sup>132</sup>

### 2.2.2. Towards the most relevant clustering criteria

There prevails a consensus among the SG-discipline researchers that firms in strategic groups are similar as to their strategic behaviour and performance. Despite the many studies which have taken place, the best way of clustering firms into strategic groups has not yet been provided. No final agreement has been reached as to how to define strategic groups in order to understand better the strategy-performance connections within the industries.<sup>133</sup> There are, actually, several views as to how to define and identify the strategic groups.<sup>134</sup> All of them result in different strategic group structures and conclusions about the nature of the competitive environment, resource allocation and the performance possibilities of the firm. On the other hand, all of them also increase the understanding of the strategy-performance connections among the strategic groups and the firms within an industry. Thus, it is reasonable to follow Thomas and Venkatraman, who suggest: *"The power of any research study is not determined by a demonstration of a set of strategic groups, but rather through their interpretation in terms of the theory that guided the grouping exercise"*.<sup>135</sup> There should be a relevant dimension for expecting such a grouping, which has, in practice, performance effects on the strategic group members. However, an additional classification approach would show that it is actually both the scope and the resources of the firm which

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<sup>132</sup> E.g. Barney 1997 p.128.

<sup>133</sup> McGee and Thomas, 1992, p.83. McGee, Thomas and Pruett, 1995; Barney 1997, p. 130 warns that clustering into strategic groups can be also misleading, because any clustering algorithm, when applied to the analysis of any data set, will generate clusters. Majumdar, 1998, p.815, warns of ad hoc strategic groups. Gordon and Milne, 1999, states that subjectivity exists in selecting strategic group formation bases.

<sup>134</sup> Thomas and Venkatraman, 1988, present several ways in which strategic groups have been identified in different industries. They (ibid.), p. 540-541, differentiate between the studies, which focus on the identification strategic group by specific variable, from studies, which focus on the strategic groups.

<sup>135</sup> Thomas and Venkatraman, 1988, pp. 548.



create the basis for strategic grouping according to the previous strategic group research reports.<sup>136</sup>

The scope - based strategic group clustering classification shows how the strategic groups can be formed through the competitive environment of the firm. E.g., Newman has used the vertical integration degree of the firms by geographic customer segment coverage in the US chemical process industries.<sup>137</sup> Frazier and Howell have found strategic groups in the medical supply and equipment industry. The strategic grouping has been based on the location of the firms, on the needs of customer groups, and the availability of resources.<sup>138</sup> Killström has found four strategic groups among the Finnish savings banks located in different geographical areas.<sup>139</sup> Tremblay has based the strategic group identification on the geographical aspects of the beer industry. The results have shown that firm size is important to the performance of a firm due to reasons such as advertising.<sup>140</sup> Cool and Schendel used the geographical coverage of their customers as criteria for grouping.<sup>141</sup>

Hayes has based the idea of grouping features to the product market served.<sup>142</sup> Lahti has shown that the selection of the product/market segment in the Finnish knitwear industry was the major factor by which a firm can change its competitive position. Some of the firms selected their niche on the market in terms of high quality and specialised product selection and as a result gained high profitability. Lahti has also shown that the strategic groups may be classified according to their strategic evolution position within the industry.<sup>143</sup> The best performing strategic group was innovative and applied the challenges of the new competitive environment in its strategies, whilst the group which performed worst tried to defend its earlier strategies.<sup>144</sup> Gordon and Milne report that there are strategic groupings based on the professional ability of the firms, which serve and compete in specific market segments in the computer industry. They even argue that strategic groups should be defined so that the barriers of the strategic groups would mirror the structure of the scope target

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<sup>136</sup> Hatten and Schendel, 1977; Snehota argues that markets are activities. 1990 p. 112.

<sup>137</sup> Newman, 1978.

<sup>138</sup> Frazier and Howell, 1983; Fiegenbaum and Thomas, 1990; Lewis and Thomas, 1994.

<sup>139</sup> Killström, 1989.

<sup>140</sup> Tremblay, 1985.

<sup>141</sup> Cool and Schendel, 1988, p. 212.

<sup>142</sup> Hayes et. al. 1983

<sup>143</sup> Lahti, 1983a.

<sup>144</sup> Lahti, 1983a.

groups. Further, they argue that the SG-discipline originates from a supply side construct, because firms try to satisfy the demand needs of the market segments.<sup>145</sup>

The resource-based strategic group classification emphasises the way in which the firms allocate their resources in the competitive environment to protect themselves from competition outside the strategic group. Harrigan has discovered several resource-based barrier-erecting activities, which may be used as criteria for strategic group clustering. She mentions factors such as advertising, capital intensity, production unit age, economies of scale and capacity requirements.<sup>146</sup> Oster has shown that advertising has sustained the strategic groups.<sup>147</sup> Among the firms in PIMS data, Galbraith and Schendel have discovered groups among the following types of strategy: low strategy intention committed, defending, growing and specialised groups.<sup>148</sup> Hawes and Crittenden have revealed strategic groups among supermarkets and Lewis and Thomas have found strategic groups in the retail grocery industry.<sup>149</sup> Dess and David define the strategic groups according to the intended Porters' generic strategies in the paint product industries and argued that the size of the firm is not alone sufficient to explain the performance differences between strategic groups.<sup>150</sup> The extent and the nature of diversification and vertical integration have been sources of strategic grouping in the insurance industry.<sup>151</sup> Mehra as well as Ruiz have found strategic groups in the banking industry.<sup>152</sup> More recently, Salimäki has discovered strategic groups in the Finnish design industries according to their market position and competitive strength in the internationalisation process.<sup>153</sup>

The strategic grouping results above show also that there exists a strong connection between the scope and the resources of the firm. That is why neither the scope nor the resource view alone is suitable to be used as the only strategic group clustering criterion.

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<sup>145</sup> Gordon and Milne 1999.

<sup>146</sup> Harrigan 1981 p. 395 and 1985, p. 57;

<sup>147</sup> Oster Sharon, 1982. See also Tremblay, 1985.

<sup>148</sup> See more of PIMS e.g.: Schoffler, Buzzell and Heany, 1974; Galbraith and Schendel, 1983, p.170-172. See also Buzzell and Gale, 1987;

<sup>149</sup> Hawes and Crittenden, 1984. Lewis and Thomas, 1990.

<sup>150</sup> Dess and David, 1984

<sup>151</sup> See e.g. McGee and Thomas, 1986; Fiegenbaum and Thomas 1993.

<sup>152</sup> Mehra 1994; Mehra 1998; Ruiz, 1998. See also Killström 1989.

<sup>153</sup> Salimäki, 2003.

There exists, however, a solid ground for the strategic groups clustering, which takes a holistic view. Because the protective barriers are consequences of the long term resource commitments in the industry, in the strategic groups and in the firms, the size of the firm takes a crucial role as the most relevant grouping factor, which has also been proved in many strategy-performance studies. For example, Dobrev and Carroll report several strategies for the firm of absolute and relative size. These provide a powerful explanation of economic performance.<sup>154</sup> The results show that the size of the firm together with the right strategies, correlate well with the performance of the firm.<sup>155</sup>

Size is a proximal measure of a firm's resources and the resources are needed to implement strategies. Through resources it is possible to construct and sustain protective barriers, which enable the exploitation of firm's potential. The size puts the resource allocation into specific frames, which may widen or constrain the future resource allocation opportunities of the firm, such as the amount or costs of the financial resources.<sup>156</sup> Thus, the size has an impact on the strategy and the performance expectations in the current strategic group or in the entry to a new strategic group.

Using size as the clustering criterion also benefits managers, because they tend to use size as a reference point as they evaluate the exploitation and performance opportunities of the target markets. Managers can also benchmark the strategy selected and resources available against the competitors, because the similar sized companies tend to compete most intensely with each other.<sup>157</sup> From the managerial point of view, the size of the firm as the clustering criterion is useful also in the interaction and co-operation between the strategic

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<sup>154</sup> Dobrev and Carroll, 2003 list size-based features such as preventing entries of other firms, organisation visibility, cost decline, social, political, distribution benefits, head-to-head-competition winning towards smaller companies, power towards suppliers, distributors, customers and, means for geographic expansion.

<sup>155</sup> Buzzel and Gale, 1987 report that: *"the result of PIMS research on market share and firm profitability is a strong positive association among the sample of single industry sub-units."* Scherer, 1984 p. 170, argues that the optimal strategy varies systematically along the absolute and relative size of a firm; See also McGee and Thomas, 1986; Hunt, 1972; Newman, 1978; Porter, 1979; Beard and Dess 1981p. 671-672. Lahti, 1983a and Lahti 2000; Cool, 1985; Tremblay, 1985; Cool and Schendel, 1988; Killström, 1989; Porac, Thomas and Baden-Fuller, 1989; Lewis and Thomas, 1990; Houthoofd and Heene, 1997; Porac et. al. in Thomas and Pollock 1999. Terävä, 1996, argues that the size of a telephone company does not effect its performance. It must be noticed that his research is focused only on technical aspects such as access lines.

<sup>156</sup> The firm size is also connected to resources availability. It might be easier for big-sized firms to have access to some resources. See more e.g. in Dranove, Peteraf and Shanley, 1998; Fombrun and Zajac, 1987; Cool and Schendel, 1988; Tang and Thomas, 1992.

<sup>157</sup> Gordon and Milne, 1999, argue that by using size as the clustering factor, the managers' subjective *ad hoc* clustering can be avoided. See also Hannan and Freeman, 1977; Thomas and Pollock, 1999.

group members in the competition against other strategic groups or against the entries from external industries.<sup>158</sup>

### 2.2.3. Strategic group - a useful frame of reference

No relevant results are to be reached by focusing only on the “technical” strategy aspects, because the organisations as a whole do not actually create strategies. The individuals, especially the managers, formulate and then attempt to outperform their strategies to achieve high performance level. In addition, the environment, the resource configurations identified, the strategy implementation, and the performance features interact with managers’ personal cognitive mental maps.<sup>159</sup>

Managers, according to their cognitive mental models, try to create the best performance potential for the strategy by matching the scope and the resources allocation together. Because of effectiveness and efficiency requirements, and because managers try to understand what it means to compete successfully, it is important for the managers to identify the most relevant competitive environment of the firm. In this respect, the statements of the SG-discipline are useful to be utilised as the guiding perspective. Thomas and Pollock even argue that managers’ personal mental model maps are an important strategy-performance link between the strategic group and the individual firm.<sup>160</sup> Thus, the concepts of the SG-discipline offers clear benefits for managers in practice. As they evaluate the potential exploitation and the possibilities of success, managers have to decide, which scope should be selected and which resources should be used to outperform competitors. The strategic group with its competitive environment helps them to identify

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<sup>158</sup> Dranove, Peteraf and Shanley, 1998; Caves and Porter, 1977; Hatten, Schendel and Cooper, 1978; Schendel and Patton 1978, have found co-operation among small brewing companies against brewers. Thomas and Carroll, in Herman Daems, 1994, take a psychological and socially approach to grouping. Thomas and Pollock, 1999, argue that also similar cognitive structure can be used to define strategic groups.

<sup>159</sup> Prahalad and Hamel, 1990, argue that the utmost responsibility of the managers is the strategy building of the firm. Busentiz, 1992, has found that entrepreneurs are systematically more subjected to biases than the managers of large firms. Managers in the same strategic group seem to have similar cognitive maps, which differ from managers’ maps in other strategic groups. Majumdar, 1998, found that U.S. telephone companies utilised their similar resources differently, such as skills, switches, lines and employees. Bogner and Thomas, 1993, discuss the competitive groups and cognitive maps shared by the strategic group members. Rumelt, Schendel and Teece, 1994, call these maps management’s intellectual backbone; See also Hatten and Hatten, 1987; Cool and Schendel, 1988, p. 220; Porac et. al., 1989; Porac and Thomas, 1990; Möller, in Näsi, 1991, p.204. Thomas and Carroll in Daems et. al., 1994; Rumelt, 1994; Fiegenbaum and Thomas, 1995; Porac et al., 1995; Mehra, 1996; Chen, 1996, Mintzberg and Quinn, 1996; Oliver, 1997; Dranove, Peteraf and Shanley, 1998; Porac in Thomas and Pollock, 1999; Barney, 2002; Nair and Files, 2003., Lahti, 2003 p.14.

<sup>160</sup> Thomas and Pollock 1999, notice challenges in identifying and measuring managers’ cognitive maps.

more easily the relevant connections between rivalry and strategy-performance model, which should be used to produce a good performance.<sup>161</sup>

Managers within the same strategic group with similar experiences share beliefs and exploit information in similar ways concerning market potential, customers, competitive circumstances, patterns of competition, competitors, suppliers, and other performance-gaining elements. As a consequence, managers within the same strategic group tend to follow the same kinds of strategy-performance patterns.<sup>162</sup> Thus, the managers are more prepared to evaluate market, competitive dynamics, strategy, and performance differences between firms within the most relevant environment – in the strategic group, where the firm is actually operating, than in the total industry. The firm may more easily be compared to the other members in the same strategic group.<sup>163</sup>

Because of similar commitments, responding to or even imitating changes with similar operational methods, strategic group members are dependent on each other's strategic decisions, and the mutual dependence is stronger than the dependence on any other strategic groups.<sup>164</sup> This improves managers' professional capability on the strategic and operational level in the specified strategic group 'cognitive reference community' and, therefore, also increases the competition between firms in the same strategic group.<sup>165</sup> Thus, utilising the strategic group as both the frame of the scope and the resource reference is an important and useful tool for managers.

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<sup>161</sup> Mintzberg and Quinn, 1996, argue that theory must be useful in practise. Thomas and Venkatraman, 1988 notice that in many studies variables are used, which are insightful for managers and do not increase the understanding of the strategy in reality. See also e.g. Cool and Dierickx, 1993; Barney, 1997, p. 133.

<sup>162</sup> Huff, 1982, argues that managers in the strategic group borrow statements from each other. See more of the cognitive communities and models also in Reger and Huff, 1993. Fiegenbaum and Thomas 1995 p. 472, point out that often in monopoly or oligopoly markets, where few competitors operate, the reference point may also be the leading company in the industry. Snehota 1990, p. 110 states that structures impose on the behaviour of the parts and that the similar size of firms creates contacts between the strategic group members.

<sup>163</sup> See e.g. Hatten and Schendel, 1977, p. 109; Hatten, Schendel and Cooper, 1978, p. 608; Caves, 1980, p. 65; McNamara, Deephouse and Luce, 2003.

<sup>164</sup> Barnett and Carroll, 1987 have found mutual interdependencies among US - telephone companies. Dranove, Peteraf and Shanley, 1998 argue that strategic group level effects originate from the strategic interaction among group members and strategic processes, which are more than a simple aggregation of firm level effects. See also Porter, 1979; Lahti, 1983a, p. 6; Thomas and Pollock, 1999.

<sup>165</sup> See e.g. Tremblay, 1985.

#### 2.2.4. Summary of the relevant competitive environment context of the firm

The reviewed traditions of strategy show the multilevel nature of the strategy of the firm. Although IO tradition argues that an industry as a whole defines the performance potential of a firm, many findings show that industry is not the only determinative entity. However, the enlargement of IO, that is SG-discipline, shows that an industry consists of one or several strategic groups with a varying number of member firms and varying modes of strategic behaviour and performance between these strategic groups. The firms in the same strategic group are rather homogenous in terms of their competitive environment, resources, main strategic behaviour and performance patterns. Clearly, these perspectives have strong influence on the behaviour and performance of the group members and, vice versa, the individual firms have effects on the strategic group. Heterogeneity in these respects prevails between the different individual strategic groups. Thus, they form an intermediate level between the whole industry and the individual firms and thus, the strategic group forms the most relevant scope and resource context of the firm. It is obvious that valuable strategy and performance information is lost, if the most significant strategic groups are summarised on the industry level.

The conceptual strategy frames of the strategic groups are in the entry, exit and mobility barriers, which accumulate the strategy results of the firms belonging to strategic groups inside the industry. On the other hand, when entering, acting in and leaving the industry, firms confront these barriers as they adjust the business scope among the potential exploiting possibilities with their resources. On the other hand, entry and mobility barriers protect the strategic groups against competition coming from outside the industry and the individual strategic group members against competition coming from the other strategic groups within the industry.

There have been various attempts to define the strategic group comprehensively. In some studies, the criteria are based on the scope of the market served and in some studies on the resource allocation. Some of the studies have used several variables, while others have used only one variable as the clustering criterion. However, the size of the firm, as the surrogate of total resources, is proved to be the most relevant criterion for clustering firms into strategic groups. The size of the firm is actually also the source of performance potential in

the scope of the selected market. Thus, the size of the firm serves as the most useful theoretical and practical basis for identifying strategic groups within industry.

The statements of the SG-discipline are also convenient decision tools for managers in their management tasks. This viewpoint is of a special importance, because it is the managers who actually evaluate competitive environment and attempt to outperform their resource allocation according to their personal cognitive mental models. It is easier for managers to adapt a reference point from the strategic group than from the whole industry with the natures of several scope and resource viewpoints. Thus, the statements of BP, along with the argument for the managers' central role as decision makers, are applicable in the concept of SG-discipline. All these arguments are strongly in favour of clustering industry into strategic groups, when the performance of firms is explained by the strategies followed.

### 2.3. Towards the Advanced Strategy-Performance model

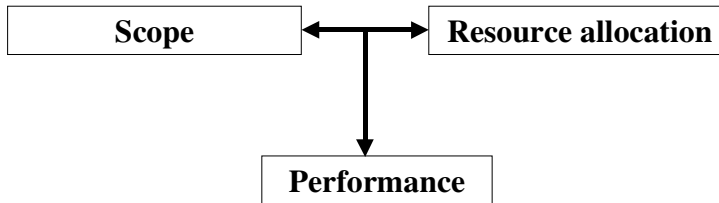
The BP tradition and the SG-discipline perspectives frame the construction of the strategy-performance model, which shows the main strategy-performance connections of the firm. Thus, the main features of the most relevant competitive environment, the results of the strategic decisions, the performance perspectives and the benefits for managers' decision making in practice, should be included in the strategy-performance model. Moreover, the model should be applicable to the industry, to the strategic group, and to the individual firm levels. Next, the strategy-performance model construction is discussed by starting from the relevant elements of the models.

#### 2.3.1. The basic elements of the strategy-performance models

Strategy management literature strongly argues that relevant elements in gaining economic performance of the firm consist of two main components. The scope and the resource allocation have to be included when the performance of the firm is explained. These elements implicitly include the decisions concerning the focus of the target market, the

strategy choices and implementation, as well as the policies guiding the activity patterns and the basis of the firm performance objectives.<sup>166</sup>

Figure 2.3 The basic strategy and performance elements of the firm



The strategy elements also implicitly refer to competition, because they determine the overall competitive strategic direction and the implementation focus of the organisation in the gaining of performance. The selection of the scope and the resource allocation also determines the competitors of the firm. The SG-discipline argues that similar scope and resource allocation decisions set the firms in the same strategic group.

Scope reflects the specific competitive target environment, where firms expect business potential possibilities and where firms focus on their efforts to gain performance. The chosen scope may constrain or widen the possibilities regarding the targeted market potential and performance. Abell has defined the scope of the firm in the strategy-performance model through the customer groups served, the customer functions, and the technology used.<sup>167</sup> Later, the scope of the firm has been defined through an enlarged number of dimensions.<sup>168</sup> In those definitions, the scope of the firm refers to the market segments, which are the targets of the products or the services of the supply. Also the geographic location, the variety of the strategic actions, the vertical integration, and the extent of related businesses in which the firm has co-ordinated strategy, has been used as the definition of the scope.

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<sup>166</sup> Mintzberg and Quinn 1996, argue that business strategy is a set of scope and resource deployment decisions. Rumelt, 1994, p.42 argues that the behaviour of firms has two components: the abstract question of which modelling assumptions are fruitful in explaining competitive strategy and the empirical issue of the actual patterns of behaviour observed among firms. See also Abell, 1980; Lahti, 1983a.

<sup>167</sup> Abell, 1980.

<sup>168</sup> Lahti, 1983a; Snehota, 1990, p.169; Porter in Rumelt 1994, p. 434. Thomas and Pollock 1999.



The scope of firm is interpreted comprehensively through SG-discipline, according to which each strategic group has a specific environment, within which the strategic group members attempt to outperform their strategies and thus gain performance. Because the scope describes the revenue-generating element of the potential exploitation, all the scope definitions listed above are also included in SG-discipline. Scope has also been used as a strategic group clustering criterion. Thus, the scope changes in the firms and strategic groups have effects on the industry structures.

The second component in the strategy-performance model is resource allocation. Resource allocation will result in strategic commitments, which are investments in the key areas influencing the economic performance in the competitive environment. The objective of these investments is to maintain and increase the competitive advantage of the firm on the target market.<sup>169</sup> For example, Noda and Collis argue that earlier resource allocation decisions influence the current and the future strategy potential exploitation possibilities and the performance of the firm.<sup>170</sup>

By the resource commitments the firms strive to create unique and distinctive competitive characteristics and capabilities, which their competitors are unable to produce, imitate or substitute.<sup>171</sup> Only competitively superior competence may be the source of economic value. For example, RBV stresses the important role of the superior resource, capital, in creating competitive advantage in a competitive environment.<sup>172</sup> The RBV approaches the rent-generating strategy framework process from the viewpoint of the resource-capabilities-competitive advantage-strategy chain.<sup>173</sup>

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<sup>169</sup> Majumdar, 1998, argues that superior firms are likely to have better resource strategies. See also Caves and Porter 1977; Oliver, 1997; Thomas and Pollock, 1999; Noda and Collis, 2001.

<sup>170</sup> Noda and Collis, 2001, show that the history of the telephone company has effects on the managers' mental models, strategy decisions and performance. See also e.g. Thomas and Carroll, 1994; Gordon and Milne, 1999; Makhija 2003: p. 439.

<sup>171</sup> E.g. Barney, 1991 p. 101. See also the notes of organisational behaviour, Norman 1984, the statements of distinctive core competence by Prahalad et al. 1994 and the notion of Porter in Rumelt 1994 who argues that all these are closely related to the resources based view. Oliver, 1997; Mehra, 1998; Thomas and Pollock, 1999. Kajanto, 1997, points out that the mobility of resources is imperfect, because the value of resources are different to different possessors. See also Makhija, 2003 p. 439.

<sup>172</sup> See of RBV e.g. Wernerfelt, 1995; Barney, 1986 and 1991; Prahalad and Hamel, 1990; Peteraf, 1993; Porter, in Rumelt, 1994, argues that RBV has great significance in changing environments, where the strategic combinations are limited and the time period is short to intermediate term. See also Nelson in Rumelt, 1994, who defines strategy as a set of resource commitments that define objectives and that serve to rationalise future decisions. Makhija, 2003; Dutta, Zbaracki and Bergen, 2003.

<sup>173</sup> See e.g. Grant, 1991, p.115; Hoopes et. al., 2003, p. 890.

Resources have been classified as human, organisational, physical, financial and technological.<sup>174</sup> Some of them are tangible, such as products and technical equipment, physical assets and persons. Some are intangible, such as skills, knowledge, organisational processes, information processing, capabilities and the image of the firm.<sup>175</sup> Intangible resources are transformed into tangible outputs through operative activities. However, the mere possession of the resources does not make them valuable. They become valuable only after they have been allocated in an effective and efficient way.

The SG-discipline puts the resource allocation element in the most relevant context, because it shows the guiding framework, within which the resources have to be allocated in order to gain the best possible performance. It can be concluded that as the strategic group members share the same scope, it is best to allocate the resources relative to the market needs and to the resource allocation of the competitors in the same strategic group. That is, according to the nature of the mobility barriers, and also because they create the relevant scope frames.<sup>176</sup>

Because strategic group members focus on a similar market and compete with similar resources, the understanding of the scope and resource connections also increase the understanding of the connections between strategy and performance of the firm. The understanding of the nature of competitive environment and the utilising of resources is actually increased by linking demand and supply approach together.<sup>177</sup> Because firms strive not only to shape their existing scope, but also to develop new competitive spaces for themselves, this approach provides valuable information about how market needs and firm

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<sup>174</sup> Classical microeconomics argues that price allocates resources, and resources should be allocated in such a way, to enable minimum costs with largest possible profits. See in Cyert and March, 1963; See more of the role of resources in Cohen and Cyert, 1965; Hofer and Schendel, 1978, p. 144-153; Lahti, 1983a p. 26 and 1987; Williamson, 1986. Rumelt 1984; Snehota, 1990, p.169; Peteraf, 1993; Farjoun, 1994; Sumit K. Majumdar, 1998. Kajanto, 1997; Oliver, 1997; Barney 1997; Majumdar, 1998; Thomas and Polloc, 1999.

<sup>175</sup> Snehota in Rumelt, 1984, argues that intangible resources constitute a determinant of the sustainability isolating mechanism. See also Snehota, 1990, pp. 96 and 196; Wernerfelt, 1984; Prahalad and Hamel 1994; Hamel and Prahalad, 1996; Kajanto, 1997; Barney, 1997, p. 41, argues that intangible routines constrain the directions of development of the firm. Majumdar, 1998; Thomas and Polloc, 1999. Makhija, 2003: 439: includes e.g. tacit knowledge in organisational resources, 1997; ITU World Telecommunications Report 1996/1997 March 1997 states that accessing, processing and disseminating information is a strategic resource.

<sup>176</sup> Porter, 1985, argues that organisations are constrained by the structure of the industry. Barney, 1997 p.27-28 states that resources can also become constraints. E.g. pure imitation in resource use may effect positively or negatively on the performance of a firm. Killström 1989, showed positive and negative effects in technology investments between the strategic groups in the Finnish banking industry.

<sup>177</sup> Lahti, 1983a; Pitt and Thomas, 1994; Porac et. al, 1994; Steffens, 1994; Cool et. al 1994; Chen, 1996; Gordon and Milne 1999; Thomas and Pollock, 1999.

resources are fitted together in a changing competitive environment. Excluding the scope or the resource allocation element when explaining the performance in the strategy research, leads to incomplete specifications and unreliable empirical results.

The third element in the strategy-performance model is the performance, which is the result of the scope and the resource allocation configurations of the firm. In the strategy management literature, various performance definitions and variables have been presented. Variables, such as the number of new products, company image, identity and reputation, the quality of products, added value, production increases and technological superiority have been suggested as candidates for factors influencing the performance of a firm.<sup>178</sup> The variety of the performance variables is also large, because the performance explanation sources have focused separately either on the scope, on the resource allocation, or on a combination of these two elements. Different industries and strategic groups with different features have also been research objects. The broad and narrow strategy-performance approaches may also have some confusing effects on the performance variables. In addition, the research approaches have focused on both operational and strategic levels in the firm.<sup>179</sup> Some of the performance variables are strongly interrelated, and some of them do not show interrelation.<sup>180</sup> In some cases, when one performance dimension has been used, the explanation has produced fair results. However, many of the performance variables can be classified as “semi-final process” results, preceding the economic performance of the firm.

The SG-discipline specifies the role of economic performance as the final element in the strategy-performance model. The discipline further suggests a strong association between strategic group membership and the performance of the firm. Similar resource allocation will result in similar economic pay-offs within the strategic group, but different pay-offs between the different strategic groups.<sup>181</sup> This does not exclude performance variations

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<sup>178</sup> See studies on different variables e.g. in Venkatraman and Rajanuman, 1986, p. 804. Ferguson, et al., 2000, propose that strategic groups differ in reputation. Peteraf and Shanley, 1997, argue that strategic groups with a strong identity have a more positive reputation. Dranove, Peteraf and Shanley, 1998, even propose that reputation may serve as a mobility barrier.

<sup>179</sup> E.g. Porter in Rumelt, 1994, p. 421 stresses the measuring of an ‘everyday level’ of firm performance.

<sup>180</sup> E.g. Patton, 1977, has found out that three performance dimensions were strongly interrelated.

<sup>181</sup> Hunt, 1972; Patton, 1977, have found a negative correlation between market share and profitability in each of the strategic groups, while the entire industry sample had positive correlation. E.g. Dess and David, 1984 have found that the best performance was in the strategic group, where the cost effectiveness was highest. The differentiating group gained the next best results. The “stuck in the middle”-group had the poorest results.

between the members in the same strategic group because of the dynamism inside it, but gives more precise strategy-performance explanations on the firm level. Altogether, different scope and resource allocation configurations have different effects on different economic measurement areas or levels.<sup>182</sup> Thus, because the economic performance of a firm can be conceptualised in several dimensions, several variables should be used when the performance is measured.<sup>183</sup>

### 2.3.2. The frame of reference: A holistic strategy-performance model

The strategy management discussion, especially BP and the SG-discipline, have shown that the strategy-performance connections of the firm include a variety of viewpoints as the formulation of the theoretical ground is constructed to understand better why firms differ in their economic performance. The discussion suggests that scope and resource allocation should be included in strategy-performance models. Thus, the model should cover the roles of the competitive environment, the target market, the resource categories, the operative action patterns, and finally, relevant performance dimensions. The model should also fulfil the usefulness requirements in the managers' strategic decisions. Further, the measuring of the strategic-performance connections should focus on strategy choice effectiveness and strategy implementation efficiency.<sup>184</sup> Thus, the model must be applicable both on business and on functional levels in the relevant competitive environment context. In this respect, the statements of the entry, exit and mobility barriers in the SG-discipline will be useful as guidelines.

Ultimately, the model which aims to measure the strategy configuration effects on the firm's performance in the best possible way should take a holistic approach. The strategy-performance has to be able to explain multidimensional phenomena, to show differences in

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When the performance was measured by growth, the focusing group had the best results. The cost effectiveness group and the differentiating group gained the next best results. See also e.g. Newman, 1978; Porter, 1979; Lahti, 1983a; Cool, 1985; Thomas and Venkatraman, 1988; Caves and Ghemawat, 1992; Dranove, Peteraf and Shanley, 1998; Mehra and Floyd, 1998; Thomas and Pollock, 1999.

<sup>182</sup> E.g. Rumelt, 1994, argues that the strategic group scope defines the competitive environment as well as the market quality and quantity needs to be satisfied. Thus, the profits are sensitive to heterogeneous sources.

<sup>183</sup> See Barney 1996, p. 63; Patton, 1977; Lahti, 1983a; Killström, 1989, Salimäki, 2003

<sup>184</sup> Rumelt, 1994, p. 42. stresses the strategy implementation together with the strategy planning as a differentiating performance factor between firms. Lahti, 1992, discuss the importance of the implementation through marketing. See also Mintzberg, 1988; Snehota, 1990, pp.193-196; Mintzberg Quinn, 1996, p.3.

the economic performance of the firms, and unite them in a cohesive entity over time.<sup>185</sup> This kind of model increases the theoretical understanding of the strategy-performance connections of the firm and serves managers' strategic decision making. Thus, the strategy-performance model presented by Lahti is a most promising frame model for the purposes of the present study, because it clearly meets the basic requirements mentioned above. The high validity, relevancy and the empirical usefulness of the frame model has been proved in many studies in different industries.<sup>186</sup> Thus, the strategy-performance model presented by Lahti is most useful for the present study. The model will now be studied in more detail, and in particular the validity of the model elements will be argued.

### The strategy-performance frame model

The constructs of the strategy-performance Lahti frame model can be traced to the scope, resource allocation and performance elements discussed above. For example, Hatten has shown in the brewing industry that the strategies in industries, industry sub-groups and individual firms can be reconstructed by the elements and activity patterns associated with the main functional areas of a firm.<sup>187</sup> Later, Hofer and Schendel enlarged the strategy-performance model including scope, resource deployment, competitive advantage, and synergy.<sup>188</sup> From these views, Lahti has defined his holistic and dynamic model.

Parallel to the results of the BP and the SG-discipline, Lahti attaches scope and resource commitments to the model as the determinative base for the performance of the firm, and widens the perspectives to a more dynamic and holistic view on the strategic and operational level. He even argues that the individual variables in the model will tell only how they have been used, but they are not alone responsible for explaining the strategy-

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<sup>185</sup> Lahti, 1983a and Lahti 1985, states that the holistic nature of the model means that each part of the model must be understood, not as an isolated unit, but as a part of the totality. Caves and Ghemawat, 1992, p.1, suggest that the strategy-performance model should include variables, which differentiate the firms according to their strategy and performance. See also McGee and Thomas 1992, p.81; Porter in Rumelt, 1994, p. 424.

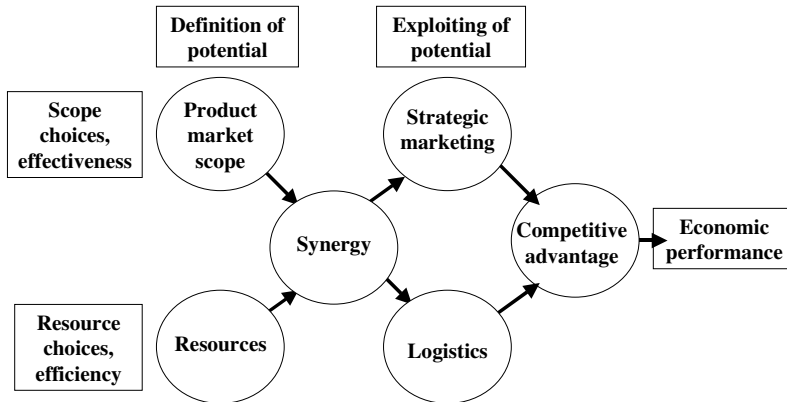
<sup>186</sup> Lahti 1983a, proved the model in the Finnish knitwear industry. Killström, 1989, has found four strategic groups, which explain the strategies and performance differences in the Finnish banking industry. Helle, Lahti and Pietala, 1990, applied the strategy-performance frame model in local communities and found different development possibilities for different communities depending on the environment and resources. Salimäki, 2003, found strategic groups among firms in the design industry. Korhonen, 2004, has used the model in foreign direct investments study.

<sup>187</sup> Hatten, 1974; The brewing industry business level strategy model showed variances both in resource allocation and performance between industry sub-groups. See also Hatten, et al.1977; PIMS-studies showed that certain key factors affected the profitability and market share of firm.

<sup>188</sup> Hofer and Schendel 1978 p. 25

performance connections.<sup>189</sup> Although, Lahti has gradually developed the model by redefining the individual model elements, the basic framework has been sustained. This frame model is illustrated in Figure 2.4.<sup>190</sup>

Figure 2.4 The strategy-performance frame model



The model includes two strategy-performance connection approaches. First, on the one hand it shows that it is important to define the strategic choices towards potential and resource allocation to generate the synergy (the left part of the model). On the other hand the model stresses the implementation of the chosen strategy in order to create the competitive advantage through the operative market potential exploitation (the right part of the model).

Second, the model illustrates the importance of external (the upper part of the model) and internal (the lower part of the model) perspectives, which has to be included as the performance of a firm is explained. The external view refers to selections and activities towards the competitive environment. Respectively internal view refers to the resource pool selections and activities performed. The performance measurement in the model has been defined in a more versatile way than just the market share or the profitability of the firm, which have been the focus of many earlier studies.

<sup>189</sup> E.g. Barney, 1996, criticises that many researchers use only one viewpoint in their studies.

<sup>190</sup> See also Lahti, 1983a; Lahti, 1999, p. 79; Lahti, 2003, p.12.

The frame model supports also the statements of BP, because it exposes that manager's strategic role is included in the strategy-performance connections of the firm. The construction as a whole, but also the individual elements of the model, focus on those decisions areas through which managers create the firm specific strategy configurations - how the firm interacts with the environment and what operational activity patterns it carries out.<sup>191</sup> In these areas managers search their strategic and operative referring points among similar sized firms. The model is also applicable in the context of the SG-discipline because of the similarities among the strategic group members. Thus, the frame model as a whole is valid and relevant to show how the strategy-performance connections of a firm actually work. In the following, the validity and relevancy of the model elements are observed.

#### Scope defines firm's market potential

The first element in the strategy-performance frame model is the scope of the firm. That is the targeted customer-product-market. The selection of scope is an important strategy-performance decision, because a managers have to decide such a competitive environment and market potential, which can be exploited in practice.<sup>192</sup> The decision affects also the performance potential that the firm actually intends to achieve.

Within each specific scope market, firms confront different market features and dynamics, such as customer volume, geographical coverage, product needs, and customer preferences. Thus, different kind of products and services are provided with different market.<sup>193</sup> Also the image and service quality expectations of the scope market may differ between strategic groups. Ferguson et al., for example, report reputation differences between strategic groups.<sup>194</sup> Much of what organisations do is also, determined by outsiders, for example, those market parties who control the flow of critical resources, upon which the organisation is dependent. For these reasons, firms, which do not have a viable strategy, adjusted the

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<sup>191</sup> E.g. Mintzberg, 1973. See also Porter in Rumelt 1994 p. 435.

<sup>192</sup> Abell, 1980 p. 22; Lahti, 1985a, p. 51; Barney, 2002,.

<sup>193</sup> Differences are described by e.g. Abell, 1980, p. 186; Lahti, 1983a and 1985, p. 143; Miller, 1987, p. 57; Williamson in Rumelt, 1994; Majumdar, 1998; Gordon and Milne, 1999.

<sup>194</sup> Ferguson, Deephouse, Ferguson, 2000. Mascarenhas and Aaker, 1989 show that mobility barriers may be derived from brand names and skills to design products. Barney, 2002, p. 65-98, stresses that the competitive environment should be included in strategy-performance models. Williamson, in Rumelt, 1994, p. 27, argues that activities should take place in the regime, which best economises the costs. Rumelt et. al. 1994, p. 33.

scope and competitive environment, will confront difficult complexities.<sup>195</sup> All these viewpoints create also market potential and competition frames, which the firms confront finally within its strategic group.<sup>196</sup> That is also why resource allocation of a firm is an inevitable element to be observed together with the scope in the strategy-performance frame model.

### Resource allocation operationalises the strategy

The second synergy creating element in the frame model is resources.<sup>197</sup> The existing resource pool is a consequence of the earlier scope, resource and strategy implementation of the firm. The role of resources is emphasised in particular in the Resource Based View (RBV). In the strategy-performance frame model the resource element includes human, organisational, physical, financial, and technology resources.<sup>198</sup>

Persons as individuals bring the human resources to the organisation.<sup>199</sup> The human resource variable refers to such resources as the number of persons, their education, professional ability, skills and knowledge, all of which should be competitive and aligned according to the requirements of the competitive environment. This approach reflects the statements of BP and the managers' individual mental models discussed earlier in the present study.

The human individuals' intelligence as a resource pool is not sufficient as such. It is important how this pool as a whole serves the performance gaining objects of a firm. Snehota, for example, argues that by linking the individual resources, the span of the resource utilisation can be extended and made more effective.<sup>200</sup> Lahti defines these resources through such organisational variables as organisational knowledge, learning of

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<sup>195</sup> Snehota 1990, p. 150, deliberates the uncertainty about the strategy choice outcomes and consequences.

<sup>196</sup> Ansoff 1979 p.20; Williamson, in Rumelt 1994, p.237-240, argues that in slow-cycle environment individual skills are central, whereas in medium-cycle environment the team co-ordination skills are critical. In fast-cycle environment the ability to innovate and adapt is most important. Porter, in Rumelt 1994, pp. 449, argues that industries with different skills and technologies gain advantage through different factors.

<sup>197</sup> See e.g. Oliver, 1997.

<sup>198</sup> Lahti, 1983a p. 26. See also e.g. Hofer and Schendel, 1978, p. 144-153, 987; Farjoun, 1994; Barney, 2002; Majumdar, 1998; Thomas and Polloc, 1999.

<sup>199</sup> Lahti, 1983a, p. 102; Grönroos, 1983; Hill, in Rumelt, 1994 p. 300, reports that according to Penrose, 1959 successful firms generate human capital, such as management, engineering and research personnel.

<sup>200</sup> Snehota 1990 pp.29, 42, 102, 131 and 184. Also Prahalad and Hamel, 1990 turn the attention to competencies in making the firm more than just the sum of individuals including the tacit knowledge.



personnel, formal planning systems, functional structures and implementation customer service.<sup>201</sup>

Physical resources create the tangible specific frames, by which firms produce products or provide customers with services. These resources are such as buildings, premises, machines, raw-materials, equipment, stock and furniture.<sup>202</sup> The amount, quality, need, and role of these resources vary according to the strategic intentions of strategic groups within industry and between firms within strategic group.

Technology has been an important driving force and it will probably maintain its role because of the information revolution.<sup>203</sup> Technological resources include production methods and systems, which refine raw materials into products, and which support the internal and customer service processes together with the customer oriented data systems. These data systems collect, store and utilise information from customer contacts and transactions.<sup>204</sup> Lahti argues that because of the production costs technology is one source of the prevailing price level. Thus, technology resource affects the performance of a firm.

In addition, firms have financial resources. They reflect the capacity, which the firm may use to get a better position in the target market, because they might easily be changed to other resources. Lahti uses cash-flow, equity, liabilities, liquidity and debt-equity ratio as the defining variable examples of the financial resources.<sup>205</sup> Resources as such affect the performance of a firm through interest rates, for example. In the strategy-performance model, all the resources together with the scope create the basis for the synergy, which in turn is the starting point of the potential exploitation activities.

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<sup>201</sup> Hedley 1976, states that firm can outperform the competitors by getting experienced. Hofer and Schendel, 1979, p.94, point out that the firms with formal systems gain usually better results than those, which do not follow formal routines. Snehota, 1990, p. 86 and 96, argues that organisational distinctive competence is manifested in behavioural routines, which affect the performance, because they embody experience of many more trials and errors than any individual could acquire. Williams in Rumelt 1994 p. 238 argues that the primary component of rivalry is learning. Hammond, in Rumelt 1994, p. 98. argues that strategy formulation becomes an organisational process. Porter in Rumelt 1994, p. 435, defines these systems as organisational routines, where the personnel plays the key part. Lahti, 2000 pp. 161-170. stresses the importance of the life-time learning of the personnel. See also Barney, 2002, p.74.

<sup>202</sup> Lahti 1988, p.26.

<sup>203</sup> Lahti, 1988, p. 26; Nelson, in Rumelt 1994 p. 2; Schultz, 1996.

<sup>204</sup> E.g. Schmittlein, 1995, stresses the important role of customer databases. See also Schultz, 1996 p.129.

<sup>205</sup> Lahti, 1988, p.26

### Synergy – starting point of operational activities

In the strategy-performance model synergy is a result of scope and resource decisions. It is firm's preparedness level as to the market potential exploitation in the performance gaining process. The adjusting of the customer market requirements and the existing resources creates the synergy of the firm inside the industry, but especially inside protective mobility barriers. Thus, the synergy level defines the potential limits, where firm may actually carry out activities to gain performance within specific strategic group. As the synergy level is defined, the roles of the potential exploiting strategy-performance model elements become important. These elements will be observed next.

### Logistics assist marketing

The organising of the product and service delivery is one of the key tasks in exploiting the market potential.<sup>206</sup> In the strategy-performance model the role of logistics is to assist and help the task of marketing, which provides commodities to the target market by creating contacts with customers.<sup>207</sup> Logistics defines how the availability of the products and services is arranged in proposition to firm's economic goals and competitive environment. Thus, logistics is more than just delivering products from supplier to manufacturer and finally to end users. In particular, the role of logistics grows in the market, where competition is not based on high differentiation and where the role of service is remarkable.<sup>208</sup> Logistics has also an important task in ensuring the high service level preparedness of the individuals in the organisation. This is because organisation members, who are committed to the strategy of the firm, will produce better strategy implementation results.<sup>209</sup>

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<sup>206</sup> Lahti, 1988, p.102 and Lahti 1985 p.104, stresses the importance of the personnel in the logistic task. Also Grönroos, 1983, stresses the interaction between firm and customer in marketing. Also Snehota, 1990, p. 157 argues that "*market exchange transactions require that relationships between actors are established*".

<sup>207</sup> In some cases it is difficult to draw a line between logistics and marketing. E.g. the interaction between customer and firm in service market may cause defining problems. However, the variable placement in the model causes no serious problems in the present study.

<sup>208</sup> Lahti, 1988, p. 11; See also Ansoff, 1975.

<sup>209</sup> Managers cannot participate in all decisions and activities in the organisation. Thus, the discussion between managers and other organisation members is important. Otherwise members of organisation may apply measures, which may be in conflict of the organisation goals. See also Normann, 1985; Porter in Rumelt, 1994 p.426; Nelson, in Rumelt 1994, p 260. McDaniel 1998, p. 8.

The process-oriented perspective of logistics in the strategy performance model includes as well all the internal and external material flows as the management of the material, information and financial flows of the firm, which integrates also the sub-suppliers into the supply chain and which try to meet customers' needs.<sup>210</sup> Also R&D investments, which prepare the firm towards market needs and against competition is placed in the logistics element of the strategy-performance frame model.<sup>211</sup>

As a potential exploiting element logistics has a close connection to the scope market of a firm. In order to performance well, logistics should be constructed in a way, which serves efficiently the strategic marketing in the scope market. The SG-discipline argues that the constructions of logistics are reasonable to be built up according to the frames of the strategic group competitive environment. Thus, logistics is an important performance explaining element in the strategy-performance model.

#### Marketing interacts with market

In the frame model, the role of the strategic marketing is to utilise efficiently by the activity patterns in the target market.<sup>212</sup> The main tasks of marketing are to position the firm in the target market and to create interactive contacts between the firm and the market potential in order to improve exchange.<sup>213</sup> This is carried out through differentiation, segmentation, and operational activities in the market.<sup>214</sup> In the frame model, marketing includes

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210 The yield on the net capital is situated in logistics, e.g. because a positive yield enables the change possibilities to enrich other resources. Negative returns decrease these possibilities. See Metz, 1988, pp.46-55. See Council of Logistics Management, 2003, [www.Clm1.org](http://www.Clm1.org).

211 See Williamson, 1975, p.177; Scherer, 1984, pp. 63, 183 and 198; Cool 1985; Lahti, 1988, p.5; Snehota 1990, p. 180; Nelson in Rumelt 1994, p. 261. argues that a clear coherence exists between innovations and other organisational capabilities in well-performing firms. Vishwanath and Mark, 1997, argue that the most important component in premium priced and high market share products is innovation. Gordon and Milne, 1999, argue that buyers are affected by the R&D investment outcome, not directly the investments.

212 Hatten, Schendel and Hofer, 1979, p.459.

213 Snehota 1990, p. 128, stresses the role of the exchange between market actors instead of departing only from production and/or technologies of the firm.

214 Caves and Ghemawat, 1992, stress the important role of differentiation-related factors especially in intra-industry profit generating. Möller, in Näsi 1991, p. 200-201 and 213, argues that marketing is responsible for market segmentation and product differentiation integrating both demand/customer and competitive perspectives. Grönroos 1983, and Grönroos 1994, stresses interaction in the marketing of services.

communication, product and the price elements of the firm.<sup>215</sup> Lahti stresses these perspectives especially in the oligopoly market.<sup>216</sup>

The role of marketing communication is shown to be very relevant in many SG-discipline studies as a performance explaining variable. The use of marketing communication, for example advertising, has also been a relevant criterion in clustering firms to strategic groups and in explaining the strategy-performance connections of firms. The research results show that information needs in target market, strategic group member profiles, resources, and competition make marketing communication a relevant factor in the strategy-performance frame model.<sup>217</sup>

The definition of products and services in the strategy-performance frame model parallels the statements of Kotler, who argues that products, services and symbolic particulars are expected to satisfy the needs of the buyers in the target market.<sup>218</sup> Within the SG-discipline Hunt was the first to stress this perspective, when he grouped home appliance firms according to the product types.<sup>219</sup> As discussed earlier, clear differences in product and service strategies between different strategic groups have been found in many industries.<sup>220</sup> Thus, products and services offered by the firm affect through the market exchange on the performance of firm, and have, therefore, to be included in the strategy-performance model.

In addition to the communication and products, the product and service prices influence to the performance of the firm.<sup>221</sup> For example, Vishwanath and Mark show differences in price effects on the performance of the firm depending of the nature of products, on the

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<sup>215</sup> Schultz, 1996, p 114, argues that focusing only on some parts of the communication, such as advertising, or personal communication, the best performance explanation power might be lost. Thus, the integrated marketing communications in performance explaining should be the main issue. Schultz argues also that marketing communication moves from company controlled communication towards customer controlled communication, from inside-out to outside-in, from potential and existing customers to the company, from the mass-media communication to one-to-one communication, from attitude driven towards exploiting behaviour based data and from a few media to a multidimensional integrated communications programs.

<sup>216</sup> Lahti 1988, p. 13 and 194.

<sup>217</sup> See e.g. Oster, 1982; Cool and Schendel, 1988; Tallman, 1991; Lewis and Thomas, 1994; Chen, 1996.

<sup>218</sup> Kotler 1967, 289.

<sup>219</sup> Hunt, 1972.

<sup>220</sup> Cool, 1985.

<sup>221</sup> See Cyert and March, 1963; Kotler 1967, Hitt, 1985, p. 274. See also Dutta, Zbaracki and Bergen, 2003, p.616, who argue that *"Pricing is an important means by which a firm appropriates value through market-based exchange."*

pricing policy, and the different natures of the competitive target market of the firms.<sup>222</sup> Also the communication capability of prices motivates the important role of the price variable in the frame model.<sup>223</sup> The SG -discipline is also interested in the prices as a group shaping factor and as a performance explaining parameter from the competitive environment viewpoints.<sup>224</sup> Including price elements into the strategy-performance model is inevitable as the competitive advantage of the firm is evaluated.

### Competitive advantage precedes performance

The competitive advantage of a firm stems originally from the strategic synergy created by the scope and resource pool decisions. Then the marketing and the logistics constructions create the competitive advantage, which is the elementary effectiveness and efficiency indicator for managers, who try to gain the economic performance of the firm. The frame model shows the important role of coherence between the scope and resources, and the need to implement the strategy with the help of interaction between the firm and its competitive environment.

Further, the S-P frame model implies that the uniqueness and the sustainability of the competitive advantage may include several determinants and combinations in proposition to the competitive environment.<sup>225</sup> The SG-discipline discussion, for example, shows that several competitive advantage determinants may have superior effects on the performance in strategic groups. These core determinants must be, however, developed to sustain the competitive advantage.<sup>226</sup> Barney even argues that the value creating ability is the key factor as to the firm's competitive advantage.<sup>227</sup>

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<sup>222</sup> Vishwanath and Mark, 1997 argue that product market share has different impact on profitability depending on whether the market is dominated by premium brands or by value brands.

<sup>223</sup> Snehota, 1990 p. 105 argues that price communication is one form of marketing communication. For example, Kangis and Passa Rust et. al., 1997, p 106, have found consumers, who associate high prices to better quality in banking industry. Williamson in 1985, in 1986 and in 1991 reports relationships between price and perceived quality: the relationship is not linear, is product-specific and sometimes possibly weak.

<sup>224</sup> See Gimeno and Woo, 1996.

<sup>225</sup> Prahalad and Hamel, in 1990 and in 1994, argue that the core competence is the explanation of the competitive advantage. Lahti, 1983a, p. 3-4, states that a successful strategy includes a set of scope and resource deployment that relate the opportunities of industry competition to economic performance. Porter in Rumelt 1994, p. 457 and Porter, 1996, argue that also internal trade-offs are factors in the competitive advantage. Ansoff 1965 argues that the skills and knowledge are included to the competitive advantage. Makhija 2003, 436-437, states that a firm's market power sources explain performance.

<sup>226</sup> Prahalad and Hamel, 1990.

<sup>227</sup> Barney, 2002,, p.33, argues that firm gain competitive advance, when it implements value-creating strategy, which is not implemented by other firms on same market.

### Economic performance as final result of success

Parallel to the statements of BP, the SG-discipline is interested in the aspects, which would explain why some firms and strategic groups succeed to gain good economic performance and why some are poor performers. The economic performance as the final element in the strategy-performance frame model ties together the explanatory results of the synergy and the competitive advantage of the firm. Actually, the performance variables are included in the frame model to show economic performance differences between the strategic groups in the industry and between the firms within the strategic groups.

The multidimensional nature of strategy of the firm can be concluded also from the S-P frame model structure. Some of the model elements pursue towards internal perspectives, some of them are interested in actions towards target market. Further, some of the explanatory elements are focused on the scope and resource selections and some of them are focused on the exploitation of the potential. Indeed, all of them have different perspectives and influence on the performance of the firm. Thus, also several performance variables of a firm are needed. For example, Lahti recommends four performance categories in the strategy-performance model: market power, profitability, economic flexibility and internal efficiency.<sup>228</sup>

Lahti defines market power as the firm's market share in proportion to the total industry. The greater the market share is, the greater is the market power. According to him, market power reflects the firm's ability to control market changes and the economic success in the competitive environment.<sup>229</sup> It is also argued that the market power of the firm reflects its possibilities to acquire resources. The firms with high market share tend to have better accessibility, for example, to large-scale benefits, financial resources, access to delivery chains, qualified personnel, and professional management.<sup>230</sup> As noted earlier, the market share of the firm has been used also as a grouping criterion in the SG-discipline in order to show the performance differences between strategic groups. Although market share is one

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<sup>228</sup> Lahti, 1983a; Porter, 1980, recommends profitability as the most important performance variable. See also Cool 1985, p. 9; Killström, 1989; McGee, Thomas and Pruett, 1995; Salimäki, 2003

<sup>229</sup> Lahti, 1983a, p.128; Porter, in 1979 and in 1980, uses market power to measure external effectiveness.

<sup>230</sup> Buzzel, Bradley and Sultan, 1975, p.98; Hambrick, MacMillan and Day, 1982, p.513; Lahti 1988, p.71.

of the key performance variables, it can not alone explain the total economic performance of the firm.

The profitability of the firm shows how effectively the strategy choices have been made, and how efficiently the intended strategy has been implemented. It is important to include the profitability variable in the strategy-performance model, because the resources and the market share can be increased only if the profitability reaches and sustains a sound minimum level in the long run.<sup>231</sup> It can be argued also that profitability is connection with managers' professional ability and with the competitive environment, where the structures, opportunities and risks are chancing constantly.<sup>232</sup> The profitability share of a firm in the industry, in proportion to the competitors, is suggested to be a most relevant performance variable, because it refers to the ability of the firm to sustain the total profitability level in changing competitive conditions.<sup>233</sup> The research results of the SG-discipline also show the central role of profitability as performance differences between strategic groups inside industries are explored.<sup>234</sup>

The economic flexibility of the firm reflects management abilities to continually preserve a sound profitability level in the chancing environment, and to prepare the firm for competition and exploitation of the future market potential. A high profitability level allows better possibilities for acquiring resources, in comparison to a situation, where the firm does not reach a minimum economic viability level.<sup>235</sup> As noted earlier the economic flexibility as a performance variable is discussed also in the SG-discipline. The discipline argues that the profitability profiles among the firms in the same strategic group are close to each other, and that the strategic group membership change will cause costs to the firm.

The market power describes the ability to control and to adapt competitive environment changes. The internal efficiency defines how efficiently the chosen strategy has been implemented through logistics system in favour of marketing. Especially, in service industries, the availability of products and services includes service quality provided by

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<sup>231</sup> Lahti 1988, p.13, See also Caves and Porter, 1978.

<sup>232</sup> See e.g. Hatten, Schendel and Cooper, 1978, p. 598; Williamson, 1975, 1985, 1986 and 1991;

<sup>233</sup> Thomas and Gardner, 1985, p. 279, suggest proportional variables, because managers can not manipulate industry total profitability. See also Hatten and Hatten, 1987.

<sup>234</sup> Williamson, 1986, argues that profitability variable is needed e.g. because of management's personal non-economic goals.

<sup>235</sup> Lahti, 1988, p. 13. According to Makhija, 2003, pp. 436-437, earlier performance is a competitive cushion.

internal logistics chains of the firm to customers.<sup>236</sup> The service quality has a significant effect on the interactive customer contacts, and therefore also on the profitability of the firm. Thus, the internal efficiency is important in explaining the performance of the firm.

### 2.3.3. Summary of the strategy-performance model perspectives

According to the strategy management literature, the scope and resource deployments are the basic elements, which explain the performance of the firm. The scope refers to the target market, where the firm has its strategic focus. The resource deployments refer to the commitments, by which the firm tries to gain performance in the chosen scope market. Both of the basic elements are included in the strategy-performance frame model presented by Lahti. In earlier BP, IO and SG-discipline strategy-performance studies all the individual elements of the frame model of the present study have also been proven to be relevant. Thus, the frame model as a whole has a solid theoretical ground.

Because strategy of the firm has several configuration aspects, it is obvious that a holistic approach will increase the understanding of the strategy-performance connections better than following only one approach view. The frame model enlarges the basic strategy-performance model elements towards a holistic approach, which include several useful theoretical and managerial viewpoints. Thus, biased interpretation pitfalls can be avoided. The frame model shows the main strategy directions followed and their main connections to performance of the firm. It collects also valuable information concerning the individual explanatory and performance variables.

Further, there are additional arguments, which are in favour of using the strategy-performance model as the frame model of this study. Firstly, it is applicable on the industry, strategic group and firm level. In other words, it enables to transform scope and resource allocation features into economic performance measures on all those levels. This is important because the SG-discipline stresses that within each scope a specific resource allocation configuration is needed. Secondly, the frame model shows the role of the potential selection in proposition to resources, and the role of the potential exploitation.

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<sup>236</sup> Lahti, 1988 p. stresses the proper client service. See also Grönroos 1983, 1990a and 1990b.



Thus, it enlarges the measuring approach from static resource categories towards dynamic resource allocation effects on strategic and functional level. Thirdly, it clearly illustrates the role of the external effectiveness towards competitive environment, and the role of the internal efficiency inside the firm. Fourthly, it implies how the synergy-competitive advantage-performance chain actually works. Fifthly, the frame model serves managers' strategy task in practice. It includes all the important strategic and operative decision areas, which managers have to deal with in gaining the performance of the firm. With regard to the objectives of the present study, the holistic strategy-performance model presented above is most promising to be used as the frame model of the current study. However, some model developing aspects will be introduced in the following conclusion.

#### 2.4. Conclusions: Towards the advanced strategy-performance perspectives

The objectives of this study focus on the explanation of the economic performance of the firm by the strategy it has followed. The earlier literature discussions indicate that the strategy-performance connections of the firm include several theoretical perspectives. The conclusion in hand will answer to the theoretical objectives of this study and create the guiding frames for the empirical research execution in the FTC.

First, the focus is on the BP and IO strategy management research traditions, which provide the present study with two approach perspectives to be applied. The conclusions of the relevant competitive scope and resource environment will be discussed through the statements of the SG-discipline. Developing remarks will also be made. Then, the theoretical Advanced Strategy-Performance model (ASP-model) will be constructed by making improvements to the frame model presented by Lahti. Finally, the ASP-model will be positioned in the relevant competitive environment context, which will serve as the theoretical frame of the current study.

#### 2.4.1. The research traditions to be followed

The approaches of the BP and IO traditions differ from each other. BP stresses the individual firm context as the performance is explained by the strategy followed.<sup>237</sup> Because of the influence of behavioralism and managerialism traditions, the role of the managers as the decisions makers is emphasised also in the BP. The statements of the Resource Based View (RBV) have also a significant influencing role on the BP. All these perspectives have to be used as well in the scope and resource allocation decisions as in the performance definition of a firm.<sup>238</sup> The BP approach is very applicable for the objectives of the present study because it actually focuses both on the business and the functional level strategies and performance of the firm.

In addition to the individual firms, the theoretical discussion implies that the competitive environment creates strategy and performance frames for firms. IO tradition approaches the strategy-performance explanation from the total industry perspective. It argues that the industry as a whole has effects on the individual firm through the mutual competitive dependency of the actors in the market. The IO tradition, however, bypasses the relevancy of the differences in different competitive environments to the individual firms inside the industry and the influence of the firm specific strategies on the performance of those firms. Actually, industry competition as a whole does not treat all firms in a similar way, or does not reveal strategy-performance differences between firms.

The IO tradition does not either pay regard to the important role of managers as active strategy decision makers. However, the enlargement of the IO, namely the SG-discipline, changes the approach towards views, which include relevant competitive environment, most important competitors, market, resource availability, and managerial reference points. Thus, the SG-discipline remarkably increases the understanding of the strategy-performance connections, and is also very useful in practice for firms.

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<sup>237</sup> Miles and Snow, 1978; Hofer and Schendel, 1978; Beard and Dess, 1980; Harrigan 1983 p. 398- 400;

<sup>238</sup> See e.g. Snehota, 1990.

### Strategic group - an intermediate level between industry and individual firm

The SG-discipline argues that strategic groups exist inside industries and that the strategic group members are rather homogenous as to their strategic behaviour and performance directions. It also argues that the group members construct protective mechanisms, strategic barriers, against competition coming outside their strategic group and industry. These resource-based industry specific entry and exit barriers and the strategic group specific mobility barriers actually create the frames for the firm specific scope, resource availability and allocation. These barriers prevent also the group members from freely changing their group membership without committing to investments along the strategies followed in the new strategic group. It is, however, evident that the barriers definitions need further development, which would explain finally also the operational activity efficiency differences between the firms inside the strategic group.

Because each individual firm has an actively followed, intended or subconsciously followed strategy, the industry and strategic group barriers cannot alone satisfactorily explain the strategy-performance connections and the differences between the firms in the strategic groups.<sup>239</sup> Inter-group and intra-group rivalries have different effects on the performance of the firm. The individual firms clearly show dynamic activity and performance variations also inside the strategic group.<sup>240</sup> These variations show how firms actually implement their strategies and achieve potential exploitation results in the competitive environment. Thus, a new very relevant barrier category will be introduced to the SG-discipline context.

As the individual firms implement their strategies to exploit the chosen potential, they actually construct firm specific functional level mechanisms to gain competitive advantage. They try to protect themselves against the competition coming from the firms within the

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<sup>239</sup> According to Barney in Rumelt, 1994 p. 67, the RBV view assumes that: *"Firms are heterogeneous in terms of their objective functions they pursue, the skills and abilities they bring to bear in maximising their objective functions, and the strategies they can conceive of, and implement in response to their competition."* See also McGee and Thomas, 1992; Mintzberg, 1994.

<sup>240</sup> Cool and Schendel, 1987, argue that mobility barriers are not sufficient to explain firm profitability. Also firm level characteristics and market factors must also be considered. Thomas and Venkatraman, 1988 p. 541 argue that firms differ in their strategies to an extent that it might be dangerous to sort them into homogenous classes. Rumelt 1994, p.66 warns that assuming only the industry or strategic group level homogeneity of competing firms, strategy models fail the importance of firm heterogeneity in determining its own behaviour. See also Miller, 1987; Fiegenbaum and Thomas, 1990; Snehota, 1990, p.31; Cool and Dierickx, 1993; Smith, Grimm, Wally and Young 1997.

same strategic group.<sup>241</sup> These mechanisms are accumulations of marketing and logistics actions performed by the firm. In the present study, this resource-based mechanism is called the *flexibility barrier*. It is conceptually parallel to the entry, exit and mobility barriers, but on the operational level of the firm. In other words, the firms try to allocate their resources with the best possible way on the operational level within the strategic group, either by generating new ways or imitating the competitors.<sup>242</sup> The flexibility barriers as such do not exclude that firms need overall flexibility concerning the industry level entry and exit barriers or the strategic group mobility barriers. The high overall flexibility of the firm is valuable especially in dynamic competitive environments.<sup>243</sup>

Because the origin of the competence in performing operational activities lies in managers' mental models, that is in the strategy implementation efficiency ability, the market exploitation possibilities varies between the firms within the same strategic group along the flexibility barriers. For example, Fiegenbaum and Karnani have found output differences between the firms. They argue that flexibility may be developed to "*a strategic weapon*", which effects on the performance of the firm.<sup>244</sup> Also Houthoofd and Heene refer to the flexibility barriers as they argue that individual firms may use a unique mix of resources and capabilities for rivalry patterns in order to gain a sustainable competitive advantage.<sup>245</sup>

The flexibility barrier elements, such as advertising and price level, may be changed more easily than the sources of the mobility barriers.<sup>246</sup> Because the flexibility barriers are connected with the strategy implementation efficiency of the individual firms, they explain why some firms in the strategic group perform better than the rest of the group members.

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<sup>241</sup> Chen, 1996; Teece, Pisano and Shuen, 1997; Ferguson, Deephouse and Ferguson, 2000; Zott, 2003, p. 98, state that dynamic capabilities of the firm, which affect the economic performance, stand for the ability "*to integrate, build and reconfigure internal and external competencies to address rapidly changing environments*".

<sup>242</sup> McGee and Thomas. 1992. Zott, 2003.

<sup>243</sup> Das, 1995; Barney, 2002, pp. 309 and 319.

<sup>244</sup> Fiegenbaum and Karnani, 1991. Snehota, 1990, p. 155 argues that market exchange is due to the transformation of resources, which generate value to others. Lahti, 1983a, argues that flexibility shows the operational ability of to sustain the profitability level in changing environment. Mintzberg and Quinn 1996 give examples of the flexibility variables such as co-ordinated and committed leadership and correct timing, security resource bases. Barney, 2002, p. 335, states that the flexibility may have several definitions. See also Stigler, 1939.

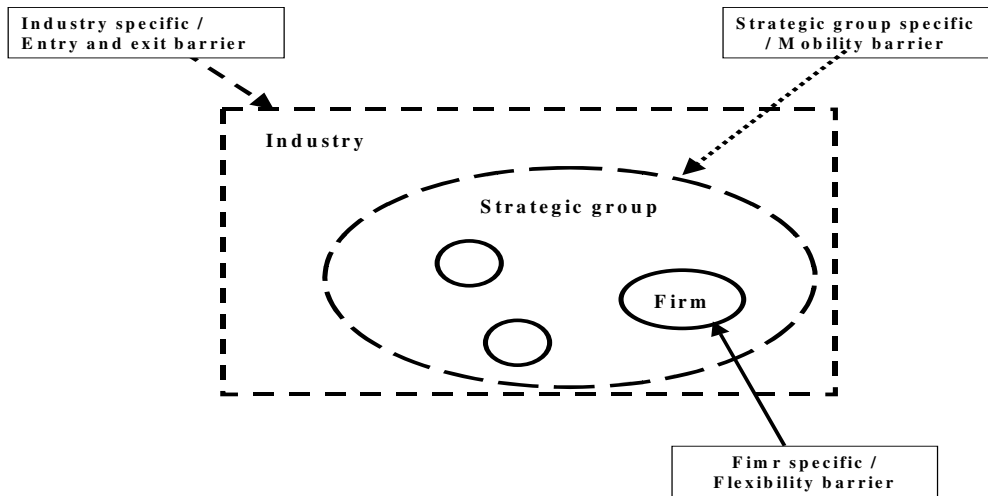
<sup>245</sup> Houthoofd and Heene argue that there are differences between the Strategic Core Group (SSG) members and other strategic group members.

<sup>246</sup> Sudharshan and Thomas, 1991, have found out that firms change their practices from period to period in pharmaceutical industry. Tang and Thomas, 1992, argue that the relocations costs determine the industries group structure. See also Nath and Gruca, 1997.

Also some of the strategic group structure changes may be traced to the differences of the flexibility barriers. Thus, the firm specific barrier has to be included in the strategy-performance model.

Figure 2.5 illustrates the conceptual positioning of the resource based barriers, which the firms confront in their competitive environment and implies that each barrier category influences on the performance of the firm. Moreover, Figure 2.5 illustrates that on the corporate level, the strategic focus of the entering firm is to overcome the existing cumulated protective industry entry barriers. Thus, the corporate synergy is created by the selection between industries. The discussion of the entry barriers goes, however, beyond of the scope of the present study.

Figure 2.5 The advanced view to the competitive barriers



The challenge of the firm, which intends to enter to some of the strategic groups, is to overcome the existing protective mobility barriers, inside of which the synergy is created through scope and resources choices along the strategic group frames. The flexibility barriers focus on the firm specific potential exploitation ability, which completes the

explanation of the connections between competitive advantage and performance of the firm.<sup>247</sup>

The discussion above implies that the barriers are accumulated resource allocation results of the firms within the industry and strategic groups. Because size of a firm is a surrogate of its total resources and because size sets scope and resource frames for the selection of potential and for the potential exploitation, the size of the firm is the most relevant strategic group clustering criterion. The role of the size is also a most relevant referring point for managers in their strategy management task in terms of scope, resource allocation, competition, competitors, and the performance decisions. This is important to note, because it is managers, who direct strategy resource configurations and operational activity patterns, and because managers tend to have similar mental strategy models within same sized firms.<sup>248</sup>

Despite some arguments that strategic groups do actually not exist, or that they are only an 'analytical convenience', the convincing results in the strategy management research strongly support that the SG-discipline is rewarding to be followed for the purposes of the current study.<sup>249</sup> The SG-discipline contributes to more precise strategy-performance connection explanations than the industry level observations or the individual firm approaches. The SG-discipline is reasonable to be followed also because it focuses on the differences between firms, on the importance of the resource allocation, and on the relevant competitive environment as far as the performance of firm is explained.<sup>250</sup> Thus, it offers also support for the BP tradition.<sup>251</sup>

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<sup>247</sup> Firm's market exploitation is limited by the possibilities, which the resources offer and by the possibilities, which managers' competence and mental models create. Porter, in Rumelt 1994, p. 451, argues that competitive advantage may reside as much in the environment as in an individual firm. The environment shapes how activities are configured, which resources can be assembled uniquely and what commitments can be made successfully.

<sup>248</sup> Thomas and Pollock, 1999, argue that the managers' mental models are the fundamental origin of the differences between the firms within the same strategic group. See also Thomas and Carroll, 1994; Nath and Gruca, 1997; Adner and Helfat, 2003.

<sup>249</sup> E.g. Hatten and Hatten, 1987, p. 329; Barney J.B. and Hoskisson R. E., 1990.

<sup>250</sup> Hunt, 1972, have found out resource allocation and performance differences between strategic groups. Later results have comforted these findings: Hofer and Schendel, 1978; Lahti 1983a; McGee 1985; Hatten and Hatten 1987; Thomas & Venkatraman 1988; Killström, 1989; Cool and Dierickx, 1993; Dranove and Peteraf, Shanley, 1998; Gordon and Milne, 1999; Thomas and Pollock, 1999.

<sup>251</sup> Lahti, 1983a; Hatten and Hatten, 1987, p. 329; McGee 1985; Venkatraman, 1997, warns to avoid narrow strategy-performance research design and recommends a strategy management tradition collection.

#### 2.4.2. The improved strategy-performance model

According to the strategy management literature, the basic strategy elements are the scope, resources and performance of the firm. The strategy-performance frame model presented by Lahti includes all these basic elements but clearly on a more advanced level. In addition, the potential selection and the potential exploitation, as well as the external and internal approach perspectives are included. The frame model is also constructed for the purposes of industry, business and functional level approaches. That is around those elements, which managers deal with their strategy tasks. Thus, the frame model takes a holistic and dynamic approach to the strategy-performance connections of the firm. It is applicable in the contexts of the industry, strategic group and individual firm, too.

#### The re-defined perspectives of effectiveness and efficiency

Despite the strategy-performance frame model presented by Lahti is most promising to be chosen as the frame model of this study, it offers also development possibilities. Lahti refers to Ansoff, who emphasises effectiveness as the external target of interaction between firm and market (scope and strategic marketing). Efficiency in his model is the target of the internal actions (resources and logistics) performed by firm.<sup>252</sup> On the other hand the frame model states that the definition of the potential (scope and resource choices) lead to strategic synergy, while exploitation of potential by the operative activities (logistics and strategic marketing) lead to competitive advantage. Because of these interpretations, the conceptual definitions of effectiveness and efficiency remain to some extent complicated and need further specification. It is obvious that the resource decisions of the firm deal with the external as well as internal matters depending on the role of the resource decision. For the same reason, they clearly belong either to the strategic or operative decision area. These definitive specifications will be discussed next.

In the present study, differently to the earlier frame model, the *effectiveness of the firm* refers to the competence to make the right strategic business level *external and internal choices* that is the scope and the resource configuration decisions.<sup>253</sup> The target of the

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<sup>252</sup> See e.g. Lahti, 1988, p. 11. See also Ansoff, 1965; Hofer ja Schendel, 1978.

<sup>253</sup> Fiegenbaum, Sudharshan and Thomas, 1990, p. 136, argue “that scope and resource deployment decisions reflect major strategic dimensions.”

effective decisions is to gain strategic synergy by fitting the strategy choices with the specific mobility barriers within the strategic group competitive environment. By these decisions, managers actually formulate the strategic direction, which the firm tries to follow on the operational level. By focusing on the sources of the mobility barriers, strategic effectiveness of the firm can be reconstructed and a part of the performance explained. In other word, the effectiveness in the Advanced Strategy Performance model (ASP-model) does not refer to operative actions of a firm.

As the firm specific strategic synergy ground is formulated, the strategy implementation task follows. In the present study, *efficiency of the firm* refers to *external and internal operative activities*, that is the competence to carry out the logistic and marketing tasks.<sup>254</sup> The target is to utilise the activity patterns to meet the competition coming through the flexibility barriers constructed by the competing firms in the same strategic group. By focusing on the sources of flexibility barriers, the functional level efficiency capability of the firm can be reconstructed as the final explanation part of competitive advantage and the performance of the firm. In other words, efficiency in the ASP-model does not refer strategic choices of a firm.

Table 2.1, implies that the performance is constructed both through the synergy creating strategic choices and through the functional activity patterns, which exploit the chosen potential.

Table 2.1 Effectiveness, efficiency and the expected performance of the firm

Strategy implementation within flexibility barriers	Strategy choices between mobility barriers		
		Low effectiveness	High effectiveness
	High efficiency	Uncertainty in performance expectations	Good performance to be expected
	Low efficiency	Poor performance to be expected	Uncertainty in performance expectations

<sup>254</sup> Porter 1996, uses definition operational effectiveness as he refers to efficiency.



Strategic choices, effectiveness, are about to confront mobility barriers and implementation of the strategy, efficiency, is about to meet flexibility barriers. A success in one of these directions is not enough, but a success in both of these perspectives is needed to gain a good economic performance.<sup>255</sup> Low effectiveness together with low efficiency is expected to cause poor performance. High effectiveness does not guarantee good performance, if low efficiency prevails. High efficiency does not either create success, if low effectiveness prevails. All together, the new definition of effectiveness and efficiency yield new strategy-performance connection interpretations.

Effectiveness and efficiency get a comprehensive performance explaining definition as they are positioned in the context of the firm strategy levels, which serve managers' strategy tasks.<sup>256</sup> This is illustrated in Table 2.2.

Table 2.2 Strategic choices and performance frames of the firm

Strategy Level	Strategic and operative choices	Basis for synergy and competitive advantage	Frames for gaining economic performance
Corporate specific	Choice among industries	Industry portfolio as surrogate of corporate total potential	Inter-industry Entry/ exit barriers, Industry portfolio synergy
Strategic group specific	Choice among strategic groups	Scope and resources as frames for business potential	Intra-industry Mobility barriers, Effectiveness
Firm specific	Choice among implementation possibilities	Activity patterns as means of utilising potential in reality	Firm specific flexibility barriers, efficiency
Managers' mental models as the basis in gaining performance of the firm			

The table above illustrates the relationships between effectiveness, efficiency, resource based barriers, strategic and operative choices, synergy, competitive advantage, and

<sup>255</sup> Hofer and Schendel, 1978, argue that different level strategies need to be coherent to ensure competitive advantage. Fombrun ja Zajac, 1987, p.46 argue *“that neither structural nor perceptual variables alone explain sufficiently the intraindustry stratification.”* Rumelt, 1994, stresses the strategy implementation together with the strategy choices as differentiating performance factors. Porter in Rumelt 1994, pp. 450-459, argues that the origin of competitive advantage is the ability of to make a good strategy choices and implement them. See also Miles and Snow, 1984.

<sup>256</sup> Adner and Helfat, 2003 p. 1013, use the definition ‘dynamic managerial capabilities’, which include managerial human capital, managerial social capital and cognition. According to them these influence separately and in combination the strategic and operational decisions of managers. See also Zott, 2003.

economic performance frames of the firm. The table clearly shows the multidimensional and holistic nature of the strategy-performance connections and the managers' crucial guiding decision role. Managers' personal expectations, visions, beliefs and experiences influence on all the strategy levels of the firm.

On each of the strategy level managers confront different challenges attached to the specific strategy level and make different kind of decisions.<sup>257</sup> Many of the strategic group studies have focused only on the semi-final external and internal process results, which will be discussed next.

#### External and internal strategy process results

The S-P frame model presented by Lahti is conceptually logical. The accuracy of the structure, however, may be developed further. Because managers want to know "how to perform better", they need information also on the success of the strategy implementation processes, which finally produce the competitive advantage and turn the competitive advantage to economic performance of the firm. Zott, for example, argues that the dynamic capabilities are embedded in the organisational processes.<sup>258</sup> The process results create external and internal reference points for managers as they design the strategy and implementation. Fiegenbaum et. al. even argue that "*firms possessing multidimensional reference points will perform well on more dimensions than will firms with more narrowly defined reference points*".<sup>259</sup> Thus, managers' mental models play a major role also in this respect. That is also why differences in the external and internal processes among the firms within the strategic group appear.<sup>260</sup>

In addition to the 'company originated' data, the 'market originated' results of the processes has to be evaluated. As a firm selects its strategic group within the industry, it intends to serve specific market segments which have specific needs, expectations and behaviour. By

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<sup>257</sup> Ruefli and Wiggins, 2003, p. 876, argue that industry, corporate factors, segments and the managers play a role in the performance of the firm; Fiegenbaum and Thomas, 1990 and 1995, discuss organisation strategy levels and managers' mental models. See also Kumar, Thomas and Fiegenbaum, 1990; Lahti 1995, p. 9; Roquebert et. al. 1996; Oliver, 1997; Osborne, Stubbart and Ramaprasad, 2001; Noda and Collis, 2001.

<sup>258</sup> Zott, 2003. Fiegenbaum Avi, Hart Stuart and Schendel Dan, 1996.

<sup>259</sup> Fiegenbaum, Hart and Schendel, 1996, p.229-230.

<sup>260</sup> Majumdar, 1998, argues that the usefulness of strategy-performance model is whether it can show differences in the strategy patterns and performance effects between the competing firms. See also Lahti 1983a; Thomas and Venkatraman 1988; Porter, 1994 in Rumelt p.426.

including the external strategy process results into the ASP-model, a lot more can be learned about the success in comparing the market segment needs with the activity patterns to be carried out.<sup>261</sup> This is because firms' external interest groups, such as current and potential customers, evaluate the process outcome and make, for example, image, service and product comparisons between the competing firms in the market.<sup>262</sup>

The internal process results include strategy commitments of the internal interest groups of a firm. These results show how the managers have succeeded to communicate the strategic intent to the internal interest groups. The process evaluation results made by the internal interest groups, for example personnel, are of a great importance, because they finally carry out strategy implementation and in practice create the flexibility barriers.<sup>263</sup>

All together measuring external and internal processes is essential because these processes include also the efficiency results of such intangible resources and capabilities, which are difficult to define in other ways. The external and internal process results in the ASP-model clearly increase the understanding of the sources of the competitive advantage. They play also an important role as preconditions as to economic performance of a firm. Thus, they are well argued to be included in the ASP-model.

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<sup>261</sup> The role of the management as the trainee of personnel, the active staff participation and the customer oriented culture are remarkable especially in service industries. The external process results can be expressed with the help of market research e.g. corporate position and image on market, service quality level, customer loyalty and the changes in buying behaviour on market. See e.g. Grönroos, 1990a, 1990b and 1994, who stresses the satisfaction of customer needs by interaction between firm personnel and customers; See also Porter, 1996, p. 66; Javalgi and Moberg, 1997; Clow, Ozment and Ong, 1997; Avlonitis and Gounaris, 1997.

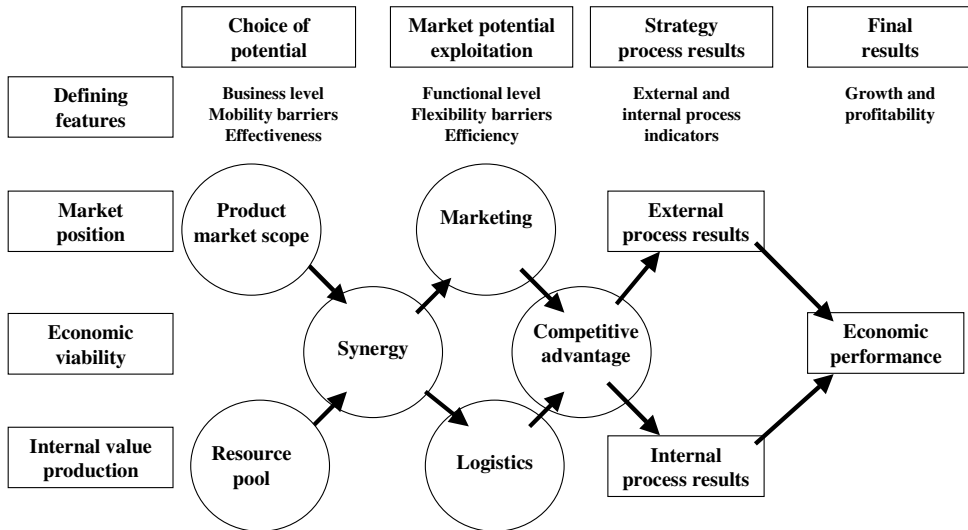
<sup>262</sup> Dierickx and Cool, 1989; Grönroos, 1990; Barney, 1991 and 1997; Caves and Ghemawat, 1992, p.5; Perrien and Ricard, 1995; Chen, 1996; Kangis and Passa, 1997, Vol. 11 no 2-3, p.106.

<sup>263</sup> Cool and Schendel, 1987, argue that barriers are not alone sufficient to explain the firm profitability, but also market must be considered. Fombrun and Zajac, 1987, p.37- 39, argue that market position evaluation of the management should have effects on the strategic behaviour of the firm.

### 2.4.3. The ASP-model in the competition context

The specifications discussed above create the conclusive basis for the ASP-model, which is presented in Figure 2.6. The model is the frame of reference for the empirical part of the present study.

Figure 2.6. The Advanced Strategy-Performance -model

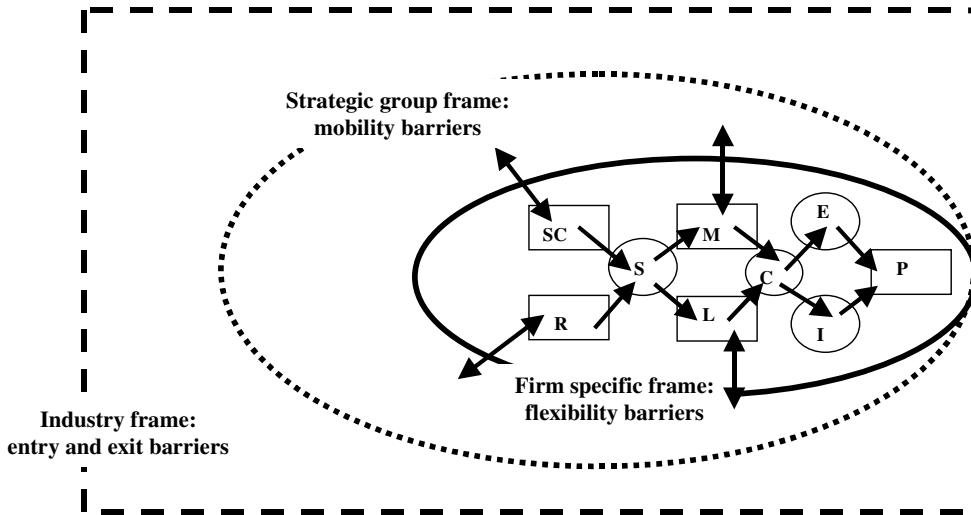


The ASP-model includes all the main elements, which are suggested in the BP tradition and in the frame model developed by Lahti. It deals with the important matters, which the SG-discipline has proved to have remarkable effects on the strategy-performance connections of the firm. It, however, re-specifies significantly the roles of effectiveness and efficiency as well the strategy process results of the firm in a new way. The relevant complementary performance explaining flexibility barrier is included in the model.

Parallel to the statements of Lahti, the ASP-model does not argue that any individual variable alone is capable to explain the performance of the firm. However, the holistic approach indicates the main strategy and performance directions of the firm. Still, information on individual variables is respected in the model. These variables help managers to interpret the competitive environment, differences between competitors, strategy actually followed and consequences on the performance of the firm.

The frame of reference of the present study is completed by positioning the ASP-model in the relevant competitive environment. This is illustrated in Figure 2.7, where the letters (Sc= scope, R= resources, S= synergy, L= logistics, M= marketing, C= competitive advantage, I= internal processes, E= external processes, P= economic performance) refer to the ASP-model elements presented in Figure 2.6.

Figure 2.7 The ASP-model and the competitive environment



An individual firm within an industry is strongly connected with the strategic group specific mobility barrier characteristics, which protects it against the competition coming from rest of the strategic groups. Further the flexibility barriers based on the strategy implementation capabilities are the protective and possibilities creating mechanisms on functional level of individual firms. Finally, the industry as a whole, the strategic groups and individual firms are influenced by the industry specific entry and exit barriers.<sup>264</sup>

All in all the frame of reference in Figure 2.7 guides the principles for empirical data gathering and analyses. Thus, it completes the theoretical part of the present study.

<sup>264</sup> See also Lahti 1992, p. 61, who illustrates the competitive environment presented by Ansoff.

### III THE EMPIRICAL PART

#### 3. THE FINNISH TELECOMMUNICATIONS INDUSTRY IN THE CHANGING COMPETITIVE ENVIRONMENT

There are many reasons why the FTC is an interesting object for this strategy-performance study. During the research period, 1992-1998, the role of telecommunications in Finnish society grew significantly, and the industry as a whole evolved remarkably towards a de-liberated environment. The major changes in industry structures, competition, services, and market needs affected the strategy re-construction needs of telephone companies. According to the SG-discipline the remarkable resource differences between the telephone companies form an interesting research base. This chapter discusses the background influences which affect the strategy-performance connections of the telephone companies.

##### Telecommunication service growth in de-regulated environment

Finland confronted a depression during the first two research years, 1992-1993. Since then, the growth rate of Gross National Product (GNP) has been fast, but the development of FTI has been very much faster. The Finnish telecommunications growth indicators are collected in Table 3.1.<sup>265</sup>

Table 3.1 Telecommunications as part of Finnish gross national product, 1992-1998

	1992	1993	1994	1995	1996	1997	1998
Development of Gross National product in Finland, %	-3,3	-1,1	4,0	3,8	4,0	6,3	5,5
Turnover of telecommunications services, billion FIM	8,9	9,3	9,5	11,1	12,4	15,9	19,4 <sup>266</sup>
Telecommunications turnover share in gross national product, %	1,83	1,88	1,82	1,97	2,10	2,53	2,88

Telecommunications turnover grew from FIM 8.9 billion in 1992 to FIM 19.4 billion in 1998. The share of telecommunications total turnover in GNP grew from 1.83 % in 1992 to 2.88 % in 1998, giving it a remarkably greater role in the Finnish economy. Actually,

<sup>265</sup> See also Savolainen, 1995, p. 175; Häikiö, 1995, p. 58.

<sup>266</sup> A great part of the growth is due to Nokia Ltd.

Finland was one of the most developed telecommunication countries in Europe during the last part of the research period.<sup>267</sup>

Kalm, expresses the change in FTI: *"Telecommunications have dramatically changed our general picture of world, business activities, work tasks and leisure time. For example network-organisation has not been possible until sufficient communication connections were available."*<sup>268</sup> He refers to the fast growing service and product development results as well as customer need changes, which labelled the whole research period. In addition, Kajanto argues that together with the de-regulation, the development of new technology is the main element, which has remarkable effects on the FTI.<sup>269</sup>

The digitalisation of the fixed-net services in 1996 was perhaps the greatest improvement as to telephone services.<sup>270</sup> As can be noted in Table 3.2, the fastest growth figures are in the mobile phone call and the data transmission services. The mobile phone accesses grew rapidly from 0.4 million units in 1992 to 2.9 million units in 1998. The number of the mobile phone accesses exceeded the number of fixed-net accesses in 1998. At that point Finland had the highest mobile telephone access density in the world.<sup>271</sup> This development is also visible in the growth of the mobile call turnover. It grew from FIM 1269 million in 1992 to FIM 6930 million in 1998, despite great price reductions. The growth consisted mainly of the increase of GSM accesses, which nearly replaced the NMT accesses during the research period.<sup>272</sup>

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<sup>267</sup> See e.g. Telecommunications Statistics 1992-1998. See also Kajanto, 1997, p.11, who reports new product announcements, technological improvements, and business initiatives.

<sup>268</sup> Interview Kalm; See also Talouselämä: 3/1996.

<sup>269</sup> Kajanto, 1997, p.20, states that technology opened new business possibilities in transferring efficiently data, in the transformation into digital switching and the development access technologies. Also Kashlak and Joshi 1994, argue that deregulation developments include a proliferation of new product/service combinations within the core business and intensified introduction of new technology. See also Staranczak et. al. 1994, who argues that it is difficult to distinguish between the influences of liberalisation from the influence of new technology on the performance of a firm.

<sup>270</sup> See the annual reports of the Finnish telephone companies. See also Kajanto, 1997, p.20. The growth of IP calls increased gradually during the research period. Kauppalehti 1.9.1999, p. 7, reports on the IP increase in USA; See also Talouselämä 2/1999.

<sup>271</sup> Financial Times, 24.7.1997, reports that the mobile penetration on the Finnish market was 34.8%. The average penetration level in Europe was 10.9 %. After 1998, 14 telephone companies were granted a licence for GSM 1800 networks: Eurajoki, Huittinen, Härkätie, Kajaani, Karjaa, Keski-Suomi, Lohja, Loviisa, Parainen, Pohjanmaa, Päijät-Häme, Savonlinna, Tampere and Vakka-Suomi.

<sup>272</sup> Post and Telecommunications Institution had monopoly as to NMT networks services. According to Kalm, Lehmus and Pere, the NMT vigorous run off began 1998, when Radiolinja began to offer significant discount as NMT access was switched to GSM access.

Table 3.2 Key volume figures of telecommunication services, 1992-1998 <sup>273</sup>

		1992	1993	1994	1995	1996	1997	1998
Fixed-networks accesses, 1000 units		2742	2763	2801	2810	2842	2861	2855
Local calls	Total turnover, MFIM	2987	3013	2954	2988	3149	3402	4161
	Mil. Units	3121	3001	3070	3164	3271	3408	3479
	Mil. Minutes	n.a.	n.a.	n.a.	11754	12705	13580	14731
Long distance calls	Total turnover, MFIM	1053 (1)	793 (1)	475	507	447	433	403
	Mil. Units	584	585	427	463	451	427	416
	Mil. Minutes	n.a.	n.a.	n.a.	2228	2204	2048	2021
International calls	Total turnover, MFIM	n.a.	n.a.	958	1179	1080	1108	1209
	Mil. Units	56	58	69	85	91	104	112
	Mil. Minutes	n.a.	n.a.	n.a.	315	332	372	404
Mobile accesses, 1000 units		386	489	676	1039	1502	2162	2947
Mobile calls	Total turnover, MFIM	1269	1444	1711	2239	3148	4610	6930
	Mil. Units	n.a.	n.a.	293	448	727	1075	1667
	Mil. Minutes	n.a.	n.a.	n.a.	923	1453	2246	3435
Data transmission	Total market value, MFIM	350	530	590	949	934	1998 (2)	2154 (2)

(1 Total sum of long distance and international calls

(2 The turnover during 1992-1996 includes the regulated data transmission. After 1996 the figures include all the data transmission on the market. <sup>274</sup>

Finnet Group started the private data transmission services in 1969.<sup>275</sup> However, these services began to grow only in 1986, because of the de-regulation, which created possibilities for expansions. In 1992, the value of the data transmission market was FIM 350 million. Six years later, the data transmission value was FIM 2154 million. The data

<sup>273</sup> See The Ministry of Transport and Communications Finland: Telecommunications Statistics 1992-1998, which categorises the services to fixed-net calls, mobile phone calls and data transmission. Calls inside a telecommunications area are local calls. Calls between the different telecommunications areas are long distant calls and country-to-country calls are international calls. Mobile phone calls are calls from a mobile phone and they end at the other terminal equipment of a mobile or a fixed telecommunications networks.

<sup>274</sup> European Information Technology Observatory 1996-2001; Interview Ilola

<sup>275</sup> According to Häikiö, 1995, pp. 13-21 and p. 75-77, the roots of data transmission service in Finland can be traced in the year 1964, when the networks opened between Helsinki and Oulu inside the networks of Kesko Ltd. One of the main reasons was the lack of connection between public owned Datapak and private owned Digipak networks.



transmission value grew fast during the whole research period despite that competition restrained the price level development.<sup>276</sup>

The number of the fixed-net accesses grew steadily from 2.7 million units in 1992 to 2.9 million units in 1997. However, the first sign of the diminishing tendency in fixed-net accesses can be seen in 1998.<sup>277</sup> During the research period, the amount of local phone calls, measured in terms of the service time and the number of the calls, was greater than other calls. In addition, the turnover of local calls grew as much as 39%. The value of the long-distance call total turnover, minutes and number of calls, diminished remarkably during the five last research years. On the contrary, the turnover of the international calls grew from FIM 958 million in 1994 up to FIM 1209 million in 1998.

In addition to the product development, increase in the industry was due to the de-regulation. At the beginning of the research period, the legislation, which maintained the monopoly on the market, was the source of the entry and exit barriers in the market. Each telephone company had a special role in providing services. Most often they concentrated on specific geographical areas and product selection.<sup>278</sup> FG members provided the market with local call services, while Sonera had monopoly over the long distance, international, and mobile phone call services. Thus, the marginal between costs and market prices was large. Moreover, the activities to re-allocate resources were cautious until the new concepts and products were proven to be profitable. The efforts in favour of new strategic approaches were modest. However, the competition pressure was steadily increasing.<sup>279</sup>

The Finnish authorities had begun to develop the market towards a new competitive industry environment. According to the authorities, the advantages of the de-regulative actions through an open and intensified competition would create better guidelines for the

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<sup>276</sup> *Omnitele*, 15/1997.

<sup>277</sup> *Arte*, Weckström and Lehmus argued that the diminishing tendency was due to growing amount of the mobile accesses. Åkermark, from The Ministry of Transport and Communications reports in *Talouselämä* 28/1999 p.10 that as many as in 600.000 households the mobile phone was the only telephone equipment.

<sup>278</sup> E.g. Porter, 1980 and 1997, p. 70, states that Government regulation is one source of barrier.

<sup>279</sup> In interviews Kalm, Weckström, Reinamo, Lehmus and Pere argued that these features were typical. The most important de-regulative actions are in Appendix 2. Annual Reports of Telecommunications operators, 1992-1998; Finnet Group Booklet, 1996; Kajanto, 1997. The advantages were highlighted also in the interviews: Lehmusto, Pere, Kalm, Weckström;

future telecommunications industry and the development of the Finnish operators.<sup>280</sup> As a result, Finnish Telecommunication Industry (FTI) had begun gradually to change from monopoly circumstances towards an oligopolistic competitive environment.<sup>281</sup> The year 1994 is a remarkable turning point. This development had an extensive effect also on the service provider structures among the Finnish Telephone Companies (FTC). New competitors with their substitute services and products entered the market. Their competitive influence, however, remained marginal during the research period.<sup>282</sup> Instead, the remarkable structure and relationship changes are visible in the telecommunication consortiums, which dominated the earlier monopoly market in the FTC.<sup>283</sup> These consortiums will be presented next.

### Two dominating consortiums in the telecommunications market

The telephone ringing was heard for the first time in 1878 in Finland. Gradually the number of the telephone companies grew to over 800 in 1938.<sup>284</sup> After 1985, the industry structure was developed so that two consortiums, Sonera and FG, dominated the FTC. In 1994, Telia changed this composition by entering the market with long-distance and international call services. However, its market share was only 1% in 1998. For example, its fixed-net service turnover was only FIM 140 million.<sup>285</sup>

During the research period, Sonera was the biggest telephone company, with the balance sheet of FIM 10 billion in 1998.<sup>286</sup> In 1992 it was a major part in The National Post institution. Two years later, the telecommunication services transferred to an newly established Telecom Finland, still owned by the Finnish State. In 1998 it was listed to stock

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<sup>280</sup> Porter, in Rumelt 1994, p. 455, argues that the role of government policy is well understood by looking at the competition on the market, because government has a strong influence on the competitive environment and thus also the strategy of competing firms. Also Jeffrey, in Rumelt, 1994, argues that the development towards a competitive environment in telecommunications industry leads to e.g. better choices, higher quality, better service and lower prices.

<sup>281</sup> See e.g. Nelson, in Rumelt, 1994, p 264.

<sup>282</sup> American RSLCOM entered market in 1996. In the same year American Falcom bought Teleykkönen. Telenordia, which was operating e.g. in Denmark, Norway and Britain, entered Finland 1998. See also e.g. Dess and Davis, 1984. Lawless et. al. 1989, who describe the role of substitute products or services, which meet the same needs on market than the existing products and services.

<sup>283</sup> E.g. Snehota, 1990, p. 132, argues that competition reforms the structures on the market.

<sup>284</sup> Telecommunications Statistics 1992-1998.

<sup>285</sup> Later Telia and Sonera joined to Telia-Sonera.

<sup>286</sup> Sonera Annual Reports 1992-1998 and Telecommunications Statistics 1992-1998: Interview: Weckström.

exchange. Then ownership basis turned towards private company form. Still, Finnish State was the main owner by the share of 51%.<sup>287</sup>

Through the defined concessions in the long distance call, the international call and the mobile phone call services, Sonera had monopoly dominance until 1994.<sup>288</sup> In 1998, the turnover share of Sonera was 52% on the telephone call market. It provided also private and business customers with local fixed-net calls dominating mainly the northern and eastern parts of Finland, though there are signs of the growing role in other parts of the country, too.<sup>289</sup> The turnover composition of Sonera shows that it concentrated on mobile communications, which represent 68% in the total turnover. The share of local calls was 19%, international calls 11%, and long-distance calls 2%. International investments got a growing role at the end of the research period, but the international returns were very marginal in 1998 compared with returns in Finland.<sup>290</sup> Internationally Sonera was considered as a very innovative telephone company.<sup>291</sup>

The second of the consortiums, the Finnet Group (FG), dominated the other half of the telecommunication market by its turnover share of 47%.<sup>292</sup> The group was composed of 46 independent, different sized telephone companies, their subsidiaries and affiliated companies.<sup>293</sup> In 1998, the balance sheet of the smallest telephone company, Keikyä telephone company, was FIM 0.004 billion. The biggest telephone company, Elisa, had a balance sheet of FIM 6.2 billion.<sup>294</sup> FG telephone companies were owned by customers, or

<sup>287</sup> In 1998 Sonera had over 220.000 private share holders.

<sup>288</sup> Mobile phone call originating from the operating area of private telephone companies had to be finally directed and paid via Sonera networks.

<sup>289</sup> Sonera entered the local-call market through buying telephone companies: See e.g. Kauppalehti 10.03.1997

<sup>290</sup> According to Weckström, Sonera started international operations, because a fast growth in some product areas in Finland was impossible due to high domestic market share of Sonera. In 1999, Sonera operated in Baltic countries, Belgium, Germany, Holland, Hongkong, Russia, Sweden, Turkey and in USA. Kaj-Erik Relander, the economy director of Sonera, reports in Kauppalehti 26.10.1999 that one third of the profitability is originated in Turkey in 1999.

<sup>291</sup> Taloussanomat 3.8.1999, reports that Sonera is number one in Europe as to the mobile phone call business. Kauppalehti 27.9.1999, reports that Sonera is the first company in Europe, which owns the television networks. Talouselämä 34 /1999, reports that Sonera sell services also to other operators. Kashlak and Joshi, 1994, p. 603-604 state that *"when the industry is deregulated in their core business but otherwise to allowed to grow, firms will either diversify in their home country while pursuing different products, remain in their core country but expand overseas, or simultaneously pursue both strategies"*.

<sup>292</sup> See company specific information later in the research results. See also Finnet Group Annual Reports 1992-1998, The Annual Reports of Individual Telephone companies in Finnet Group 1992-1998 and Telecommunications Statistics 1992-1998.

<sup>293</sup> Elisa obtained shares in Tampereen Puhelin and Keski-Suomen Puhelin.

<sup>294</sup> More detailed information is available in paragraph five.

private and public shareholders, and the company form development was from the co-operative mutual societies to the listed companies.<sup>295</sup> These telephone companies owned Kaukoverkko Ysi Ltd., which served with long distance calls, Finnet International Ltd., which served international calls and Radiolinja Ltd., which was the first GSM-operator in the world.<sup>296</sup> The FG owned the major share of Datatie, which provided the market with data transmission services.<sup>297</sup>

According to their concessions granted by the telecommunications authorities the FG telephone companies had monopoly dominance in terms of local call services in their operation regions until 1994. In 1998, the share of local call revenue in the FG turnover was over 50%. Comparable turnover share of mobile calls was nearly 40%, international calls 6%, and long-distance calls 4%.<sup>298</sup> During the first years of the present research, the FG telephone companies dominated the western and the southern parts of Finland, and especially Helsinki area. Each of the telephone companies made independently the strategic decisions within the frame of the concession. It was typical that managers of small telephone companies shared their experience and co-operated with each other to gain better performance.<sup>299</sup>

There existed customer needs, which were beyond the service selection of the individual FG telephone company. At the beginning of the research period, long-distance, international, and mobile calls were transmitted through Sonera networks. Due to the deregulation in 1994, the concessions of the FG members were remarkably enlarged. Therefore, the FG established specialised affiliated companies to take care of the new service possibilities.<sup>300</sup> Figure 3.1 shows service structure of the FG members.

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<sup>295</sup> Elisa and some of middle sized FG telephone companies were listed in stock exchange during the research period and e.g. Keski-Suomen Puhelin and Sonera expressed their intention to be listed.

<sup>296</sup> Elisa expanded its ownership to 67% of Radiolinja in 1999. See Radiolinja annual reports of 1994-1999 and Elisa 1994-1999 annual reports.

<sup>297</sup> There existed also discussions to build a Finnet Corporation. No results, however, were achieved.

<sup>298</sup> Telecommunications Statistics 1992-1998.

<sup>299</sup> Interviews: Lehmus and Rikala. See also Dranove, Peteraf and Shanley, 1998, who argue that interactions among strategic members are built up and maintained over time.

<sup>300</sup> See FG affiliated company key figures in Appendix 3.

Figure 3.1 The service structure of Finnet Group companies

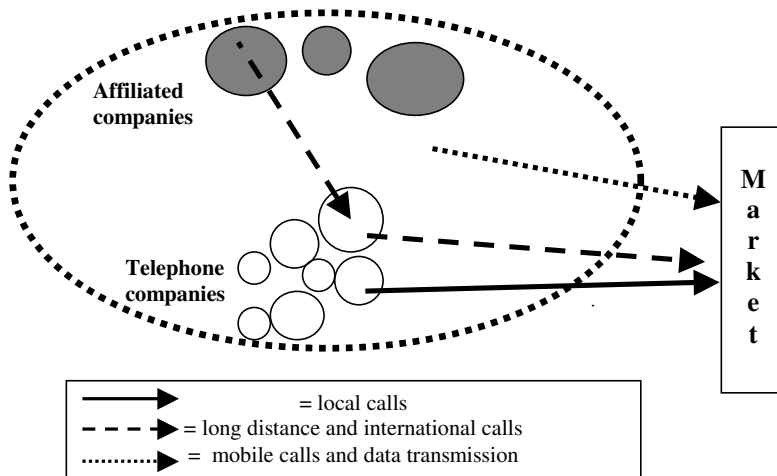


Figure above illustrates that market was provided with services from individual telephone companies, from the FG affiliated companies and services originated from affiliated companies, but transmitted to customers through telephone companies. As to the international business the largest FG member Elisa expanded its operations to Baltic countries, and Germany at the end of the research period. Also Radiolinja was present in Estonia.

#### Competition increased gradually

The great changes in the competitive environment and new technology are expected to have effects on the service marketing in the FTC, that is on the prices, logistics and marketing communication. Generally, the price level of the telephone call services falls significantly between 1992 and 1998. In terms of telecommunication service rates Finland was ranked among the cheapest countries in EU and OECD if mobile phone call prices are excluded.<sup>301</sup>

Between 1992 and 1998, local call prices fall by 13%, prices of the long-distance calls dropped to a sixth and international calls to one quarter of their previous price levels.<sup>302</sup> Still, the dominating telephone consortiums continued to protect their earlier monopoly

<sup>301</sup> See OECD, 1999: [www.OECD.org/dsti/sti/it/cm/prod/e99-11.htm](http://www.OECD.org/dsti/sti/it/cm/prod/e99-11.htm).

<sup>302</sup> See the Telecommunications Statistics 1998; The Finnish Consumer Agency Report, 1996. The actual prices are difficult to precise, because of many elements connected to each other.

positions by defending existing high price levels.<sup>303</sup> To promote competition and to prevent monopoly networks prices, Telecommunications Act (1999) came into force. Especially, operators with a significant market power faced stringent obligations.<sup>304</sup> However, by the end of the research period prices still have features, which are not typical to competitive environment.<sup>305</sup> Actually, as late as in 2003, authorities have made remarks that the competition is not keen enough.<sup>306</sup>

In addition to the prices, monopoly market had effects on marketing communication. The marketing communication had only a very minor role in the strategies of the telephone companies. As will be shown later in the research results, advertising expenditures were almost on a zero level in most of the telephone companies at the beginning of the research period. Usually, the marketing communication efforts made, such as public relationship and sales promotion, were directed to the company market potential.<sup>307</sup> In 1994, the advertising of mobile phone call services, however, began to grow remarkably.

At the beginning of the research period, the specialised sales personnel took care of the company market, while telephone company outlets served the private household market. After the launch of mobile phone call services, the number of the outlets expanded rapidly with the help of the specialised outlet networks.

In summary, de-regulative changes in the legislation, industry constructions, new technique and products, marketing, delivery, and geographical operation areas positioned telephone companies to a new strategy and performance condition. The need to re-allocate resources

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<sup>303</sup> As an example: when Elisa raised local call prices for households, Sonera and Telia didn't react. According director, Mr. Yli-Äijö, Sonera, in Helsingin Sanomat 06.07.1997, Elisa's local networks rent prices were high, because Elisa owned the local-call fixed networks. Carroll in Rumelt 1994, p 287, describes the situation by saying that *"It appears that, when many individual firms manage to get their fates tied to those of many other organisations, the dis-equilibrium can be maintained for a long period"*.

<sup>304</sup> The Act increased the competition in long distance calls, international calls and data transmission.

<sup>305</sup> Interviews: Pere, Weckström, Artte, Lehmus. The data transmission prices might include: implementation of the service, rents, tariffs according the service time used, the tariffs according the data amount, extra service, transmission tariffs etc. See: The prices of data transmission services 15/1997.

<sup>306</sup> Kauppalehti 6.2.2000: According to FICORA that the price competition in local calls is not satisfactory. Also Helsingin Sanomat 10.4.1999, reports that Finnish Competition Authority (FCA) investigates the local phone call competition. Kauppalehti 1.11.1999 notices that the telecommunications service prices are complicated and further reports that FCA insists decreasing of the Elisa local-net hiring prices in favour of the competition. Helsingin Sanomat 5.05.2001 reports that according to FCA Pohjanmaan Puhelinosuuskunta does not follow fair competition rules. See also Taloussanomat 30.11.2001 and 6.12.2003.

<sup>307</sup> Interviews Lehmus and Weckström stated that the marketing cost data is not available. Also the book-keeping methods tell that the role of marketing has not been very important.

was obvious. Thus, effectiveness and efficiency challenges offer a unique possibility to examine the strategy and economic performance changes between the strategic groups with the different sized telephone companies.

## 4. RESEARCH DESIGN

In the following, the research design of this study will be defined according to the definition of the Advanced Strategy Performance model (ASP-model) presented earlier in the theoretical part. First, the basis for the strategic group clustering in the FTC is defined. Then, the strategy and performance variables of the ASP-model will be specified. The presentation of the data sources and the data gathering processes follows before the presentation of the data analysis methods of this study. Finally, the validity and reliability of the present study will be discussed.

### 4.1. Strategic group clustering specification in the FTC

As noted earlier in the theoretical part of this study, strategy management literature strongly stresses the important role of the resources as to the entry, mobility and flexibility barriers in the performance gaining element of the firm. The literature also shows that firms with more resources may have better possibilities to enlarge their scope in comparison to the small firms. Because the size is a surrogate for the total resources of the firm, it also stands for the strategic choices and exploitation possibilities of the firm.

Parallel to the statements above, it is obvious that different sized telephone companies may provide different market segments with different kinds of product and service compositions because of the resources. In product development particularly, sufficient resources are needed in the very fast developing FTI.<sup>308</sup>

The different sized telephone companies are clearly located in different geographical areas according to the size of the market potential served.<sup>309</sup> At the beginning of the research period, the small telephone companies focused on servicing the limited local market with minor market potential. Moreover, the small telephone companies tend to have smaller business customers than the large ones. A minor telephone company has not “market

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<sup>308</sup> Small telephone companies do not usually have resources for massive product development operations. Interview: Weckström. See also Helsingin Sanomat, Vatanen Harri 19.2.1999.

<sup>309</sup> E.g. Cool, 1985, used geography as an explanatory variable. Majumdar, 1998, used geographical variables referring to potential and argued that the volume of phone calls is a function of customers, territory and institutional characteristics.



power” enough to buy its way to new market with the help of mergers, for example. The biggest telephone company is to be categorised to a nation-wide service provider class.

From the viewpoint of the SG-discipline it is also interesting to see that between the small sized telephone companies, non-competitive co-operation and social systems exist, forming the competitive behaviour of the individual telephone companies. Altogether, the size of the telephone company as a basis for clustering into strategic groups is the most reasonable to be followed concerning the Finnish telephone companies.

#### 4.2. Advanced strategy-performance model variable specifications in the FTC

In strategy management tradition, strategy-performance studies have been carried out in many different industries using a variety of different variables. The tradition argues that a strategy-performance model should use such variables that define the effects of the competitive environment, scope, and resource allocation on the performance of the firm, and are enable to discover the differences in these elements, between the firms. The elements must be observed through the industry specific relevant variables, because in each industry market potential, competitive conditions, and the resources needed are unique.<sup>310</sup> The influence of these differences on the economic performance of the firm is visible especially on the business and the functional levels.<sup>311</sup>

Furthermore, according to the SG-discipline, the competitive environment and resources differ between strategic groups. It means that in different strategic groups different variables are relevant as to the explanation power of economic performance. The research variables in the strategy-performance model must be chosen with the specific industry and strategic groups in mind. Therefore, the FTC needs specific research variables to be applied in the advanced strategy-performance model. Despite the fact that these variables might to some extent be restricted only to the FTC, the in-depth studies however most often show

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<sup>310</sup> Snehota, 1990, p. 11, argues: “A key step in management thinking is the identification of attributes of the business enterprise”. See also Cool and Schendel, 1987, Mascarenhas and Aaker, 1989; Porter in Rumelt 1994, p. 446.

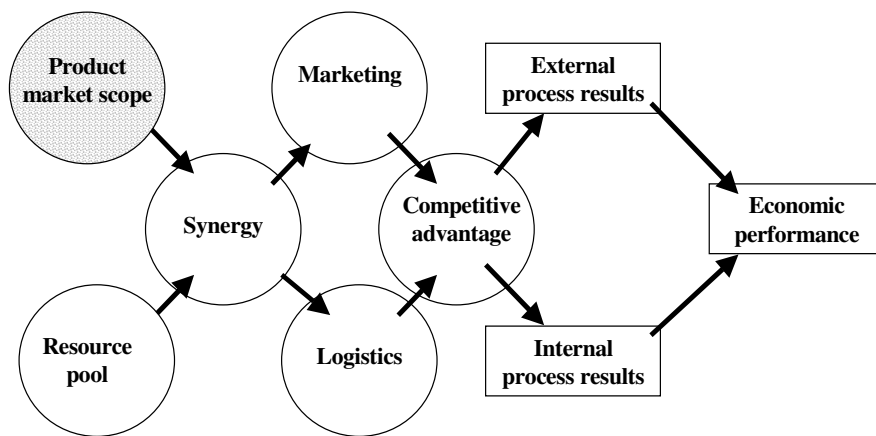
<sup>311</sup> Porter, in Rumelt, 1994, pp. 428-429, 443, argues that small number of variables in strategy-performance model fails to capture the simultaneous choices over many variables, which characterise most industries. Thomas and Pollock, 1999, state that strategy must be measurable. If the necessary elements are not included, it is of limited utility learn about how the firm strategy and performance are connected on specific market.

good strategy-performance theory developing power.<sup>312</sup> On these bases, the variables for the strategy-performance model of the present study are defined by beginning with the explanatory variables.<sup>313</sup>

### Scope

The scope in the strategy-performance model illustrates the multidimensional strategic decisions, which the telephone company makes with regard to the competitive environment - especially concerning the product market potential. Several variables as explanatory elements of performance are needed to define the scope, which is the potential available to the telephone company. The position of the scope element in the strategy-performance model is illustrated in Figure 4.1.

Figure 4.1 Scope in the advanced strategy-performance model



Legislation restricted the geographical location of the telephone companies at the beginning of the research period. The market area of each telephone company was defined through the licences granted by The Ministry of Transport and Communications Finland. These formed the operational area borders, within which they were able to exploit existing and arising potential opportunities without competitive threats because of the lack of competitors. The smallest telephone companies belonging to Finnet Group (FG) operated on the local rural

<sup>312</sup> Porter in Rumelt 1994, p. 429.

<sup>313</sup> All the ASP-model variables are collected in Appendix 4.

market. The medium-sized telephone companies operated in the mid-sized towns. Also, the biggest telephone company Sonera was obliged to operate in a specific geographical area regarding local call services. With other products it covered the whole Finland, because of the monopoly position protected by law. The actual potential defining scope variables are specified from these premises.

First, the **accumulated total tax income** in the operational area of the telephone company is attached to the advanced strategy-performance model to reflect the general economic activity level. It is to be expected that if the general economic level is low, the telecommunication services potential is also low. **The number and turnover of the potential firms** acting on the area are involved with the model for the same reason. **The population of the operational area** of the telephone company is chosen into the model, because it has phone calls creating potential.

Galbraith et al. suggest that in strategic group and mobility barrier analyses, the evaluation of the market relationships context should be included. On the scope market potential customers have expectations upon the overall image and the service level of the telephone company, when they select the telephone company, and when the customers evaluate the services.<sup>314</sup> The reputation of the strategic group has been argued to serve even as mobility barrier.<sup>315</sup> The values of these expectations are studied in the present study by market research among company customers of the strategic groups. These variables originate from the management interviews in Elisa, Sonera and Finnet Association and from the earlier studies carried out by The Ministry of Transport and Communications Finland.<sup>316</sup> The company image and service variables used in the current study to clarify scope market expectations are in Table 4.1.

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<sup>314</sup> E.g. Galbraith, Merrill and Morgan, 1994, p. 614 argue that customer preferences and beliefs have been overlooked in the strategy-performance studies despite many of the barriers are associated to customers. See also ESOMAR, 1998a; Doyle, 1994; Lahti 2003, p.16-17.

<sup>315</sup> See e.g. Dranove, Peteraf, Shanley, 1998. Ferguson, Deephouse, Ferguson, 2000.

<sup>316</sup> Interviews: Weckström, Lehmus, Reinamo and Artte.

Table 4.1 The company image and service level expectation variables

Image variables			
Reliable	Responsible	Customer oriented	Competent management
Local	National	International	Future leader
Technology forerunner	Full scale supplier	Extensive product range	Established resources
Customer industry knowledge	Active information services	Active competitor	Business profit oriented
Mutual society	Specialised	Environmental oriented	
Service quality level variables			
Reports on products	Cost saving information	Contact intensity	After sales service
Quality /price relationship	User guidance	Maintenance	Serving willingness
Customer flexibility	Service speed	Product information	Professional ability
Service correctness	Service selection	Service availability	Delivery fluency
Contact person	Service kindness	Data transmission reliability	Invoice correctness

## Resources

The resource element position in the advanced strategy-performance model is illustrated in Figure 4.2. Parallel to the recommendations of the strategy management literature, resource variables are clustered into human, organisational, financial, physical and technological.<sup>317</sup>

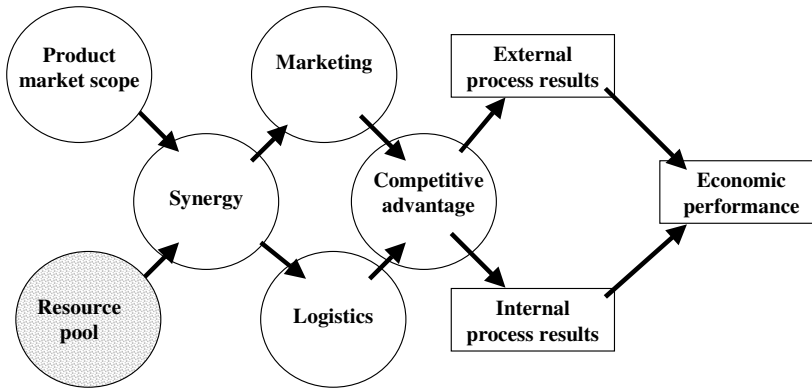
It has been typical that the strategy-performance studies in telecommunications industries focus only on the number of the employees as an indicator for human resources.<sup>318</sup> In the present study however, the human resources are further categorised not only into the amount, that is **the number of personnel**, but also the professional quality of the human resources, because the service quality, for example, affects the performance of the firm.<sup>319</sup>

<sup>317</sup> According to Majumdar, 1998 owners are also resources. This is not relevant, in the present study, because many of the telephone companies have mutual company form. On the other hand the all the resources such as capital, knowledge, which owners may offer to firm, can be categorised under the five categories mentioned.

<sup>318</sup> See e.g. Majumdar, 1998. See also Terävä, 1996, who reports studies, where the number of employees is used as an explanatory variable in telecommunications industries.

<sup>319</sup> See more of the service quality e.g. in Grönroos 1998.

Figure 4.2 Resources in the advanced strategy-performance model



The data of the actual human resource professional quality is limited in the Finnet Group Association (FGA) and the individual telephone company statistics. Therefore, it is presumed that the basic education of the employees can be used as a relevant substituting quality variable, which affects the economic performance.<sup>320</sup> The specific variables used are **the number of employees with academic education** and **the number of employees with college education**.

As noticed earlier in the present study, the organisational resources are based on the accumulated knowledge and the professional capability created by individual human resources as a collective, that is the processes. It would have been relevant to explore such indicators as a number of organisation vertical levels, key competence features, and information flow effectiveness and efficiency in the strategy implementation, among the telephone companies.<sup>321</sup> However, the specification of the organisational resource variables was not empirically possible. This is because the relevant organisational resource data simply had not been collected or, with two exceptions, the telephone companies refused to give the data. However, it is presumed that the organisational resources are the origins of the internal and the external strategy process results. These origins affect the economic

<sup>320</sup> It was difficult to get education data. First, the data did not exist in small telephone companies. Second, telephone companies refused to give data, which they might have. Also Terävä, 1996, reports that education data is seldom available. E.g. Barney, 1997, p. 76, states that learning will reduce costs.

<sup>321</sup> Kosonen, Talouselämä, 7/1997, pp. 17-19, argues that the whole organisation must be connected to the identification of market information. Information should be used to check the validity of the strategies. Everyone should have a strategy information reference point upon which they may evaluate observations and act quickly along information. World Telecommunications Report, 1996/1997, argues that accessing, processing, and disseminating information in electronic form, have become a strategic resource.

performance through the implementation of strategy, for example, through the commitment of personnel to the image and the service quality levels. Thus, the organisational resources are implicitly included in the ASP-model, although the individual organisational variables cannot be specified.<sup>322</sup>

Physical resources are one category to be used in the advanced strategy-performance model. In the earlier studies in telecommunications industries, such variables as the length of digital channels, switching and transmission equipment, land and buildings have been used.<sup>323</sup> To increase the comprehensive strategic level understanding, the physical resource variables of the current study are constructed with the help of a more holistic resource approach, by using the balance sheet information of the telephone company, and avoiding too detailed product level observations. The applied variables are **fixed assets, investments and depreciation of the telephone company**. They define the strategic resource preparedness to create future potential exploitation possibilities. For example, depreciation describes the ability to gain good performance from the viewpoint of new investments. Any other telephone company specific variable data, which would cover the whole of the FTC, is not available.

The fourth resource category suggested in strategy management literature is technology. Strategy-performance research results exist that indicate that technology may create performance superiority among telephone companies.<sup>324</sup> However, for the purposes of this study, it was not possible to obtain any specified technology resource data from the individual telephone companies. The managers refused to give this information by referring to the competitive environment. Anyhow, the interviews in The Ministry of Transport and Communications Finland, Finnet Association and in the biggest telephone companies proved that similar technology was available in all of the telephone companies. The technology availability was organised either by their own resources or in the FG with the help of the affiliated companies and the subsidiaries, where the technology development processes were concentrated during the research period.<sup>325</sup> In the individual telephone company, the fixed assets, investments and depreciation variables also include technology

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<sup>322</sup> This is one of the main reasons, why market research was carried out.

<sup>323</sup> Terävä, 1996, p. 28, presents a list of studies concerning telecommunications industry production.

<sup>324</sup> Majumdar, 1998.

<sup>325</sup> The medium- and small-sized telephone companies did not contribute much to technology innovations. Snehota, 1990, p. 35, argues that technology innovations are consequences of entrepreneurial action.

resources. They are therefore implicitly included in the strategy-performance model. According to the interviews, the ownership of the technology and the prices to rent the technology are important with regard to the economic performance of the telephone company. These variables will be positioned in the logistics element of the ASP-model.

The fifth resource category is financial resources, which may easily be turned to other resources.<sup>326</sup> The telephone companies may increase the financial resources through good economic performance by borrowing or gathering capital from the share-holders. The financial resource variables to the ASP-model are selected from these premises.

**Cash and bank financial balance assets** and **current assets** create the frames, within which the firm is able to immediately answer to the operations of the competitors and the changes on the market. These resources may be utilised in increasing the number of the personnel or the physical resources, for example. **Short term and long-term debts** are the financial resources, which have been borrowed for the purposes of the telephone company strategies and activity patterns. In the present study **solvency** of the telephone company - the debts in proportion to the total sum of the balance sheet - is chosen as a financial variable to illustrate the proportion between borrowed and own financial resources. The proportion has an influence on the economic performance of the telephone company through the cost of capital.

### Logistics

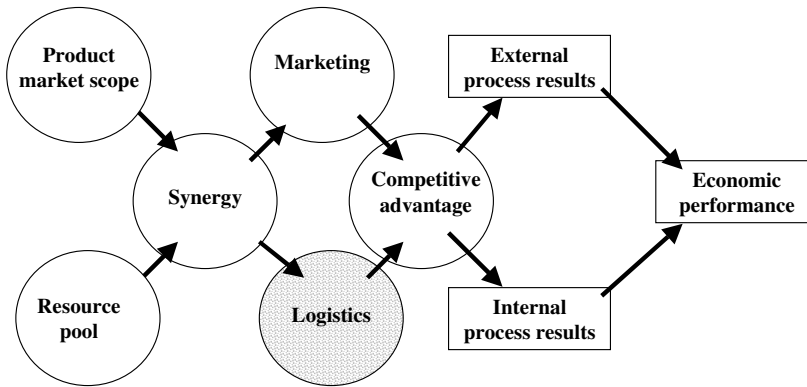
The task of logistics is to meet the promises that the firm's marketing function make to the market: the products and services should be available in the right place at the right time. The position of the logistics element in the ASP- model is illustrated in Figure 4.3.<sup>327</sup>

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<sup>326</sup> Williams in Rumelt, 1994, pp. 239-242, argues that firms compete in the fast-cycle rivalry with their R&D and/or marketing capabilities. This usually calls for large resources and investments.

<sup>327</sup> Fast-cycle rivalry is typical for the telecommunications industry and the distribution increases in importance. E.g. Williams, in Rumelt 1994, pp.239-242, argues in favour of this viewpoint in general.

Figure 4.3 Logistics in the advanced strategy-performance model



The total number of fixed-net accesses and the number of fixed-net company accesses are essential technology channels, through which telephone companies distribute the main part of their services to market.<sup>328</sup> The telephone company level logistics capacity of the mobile, local, long-distance, and international phone calls, as well as the data transmission service, would have been most useful variables, but the data was classified as confidential and subject to business secrecy.<sup>329</sup> The outside distribution network is also an important but often ignored part of the logistics system in strategy studies in telecommunications industries.<sup>330</sup> These networks often enable the supply of services that had not otherwise been possible for the individual telephone company. Unfortunately, this kind of data was not available. However, **channel rents** paid to the other telephone companies measures the use of the outside distribution network capacity. This variable also shows the revenue generating sources between the possessions of local versus non-local logistics elements.<sup>331</sup> For example, Radiolinja, Datatie, Kaukoverkko Ysi and Finnet International hired a logistic service capacity to individual Finnet Group telephone companies.

<sup>328</sup> Majumdar, 1998, used switch and access line number as explanatory strategy variables. The capacity of telephone number capacity has been also used as a logistic variable. It is not a relevant variable, because operators build number capacity up to level, which over-satisfies the demand. Reinamo mentioned this feature to be typical for the Finnish Telecommunications Industry. Majumdar, 1998 and Manzini and Thalman, 1994 agree this. Terävä, 1996, p. 28, presents studies concerning Telecommunications Industry production. As to the mobile and data transmission capacity, detailed information was not able to get from individual telephone companies.

<sup>329</sup> Interviews of Artte, Lehmus, Reinamo, Weckström

<sup>330</sup> See Jang and Norsworthy, 1992; Terävä 1996.

<sup>331</sup> See also Cool, 1985, who found differences between strategic groups according to the distribution channels used. Snehota 1990, p. 123, argues that ties in networks influence on the behaviour of the market actor.



**The number of the telephone company outlets** is also included as a variable in the ASP-model. These outlets sell services especially to households and the smaller firms. Larger firms are usually served by specialised sales organisations.<sup>332</sup> The number of the mobile phone accesses and the data transmission service outlets would have also been useful, but managers interviewed categorised this data as subject to business secrecy.<sup>333</sup> A projection of this capacity is, however, included in the strategy-performance model through the market research results. In the last year of the research the number of outlets in a franchise, for example, began to increase.<sup>334</sup>

The service quality preparedness of the personnel is important from the logistics point of view because it affects the performance of the firm.<sup>335</sup> Thus, the investments on service preparedness of the personnel are implicitly included in the ASP-model. **The personnel costs**, including personnel development costs, show that the role of the personnel represents a logistic element of the firm. The data concerning the improvement of the professionalism of the personnel at the individual telephone company level would be relevant variable, but the data is not available.

According to the definition of logistics, the financial resource returns belong to the flows, which affect on the logistic preparedness of the firm.<sup>336</sup> In order to measure the returns on financial resources, **net capital costs** are the most relevant variable. Negative net capital costs increase the financial resources. Consequently the positive net capital costs decrease these resources.

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<sup>332</sup> According to the interviews (Weckström, Lehmus, Reinamo), Sonera and Elisa have specialised sales organisations.

<sup>333</sup> These outlets are as well in FG as in Sonera are usually affiliate companies or telephone company subsidiaries.

<sup>334</sup> Päämies and Telering distributed Sonera's products, Sonera annual report, 1999; Respective Mäkitorppa, Setele and Radiojätti were distributors for Elisa, Annual report, 1999; Taloussanommat, 10.8.1999, reports that Turun Puhelin and 12 other telephone companies opened 21 franchising outlets.

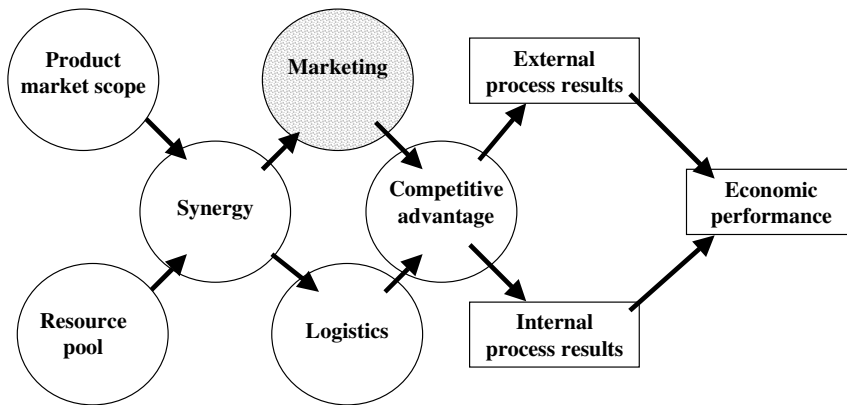
<sup>335</sup> See Grönroos, 1983; Lahti, 1988, p. 43 stresses the important role of the personnel in the logistics of the firm. See also Normann, 1985 and 1991, p.15.

<sup>336</sup> Net capital returns may be invested also to other activities, for example, in marketing activities.

## Marketing

Marketing is responsible for the exploitation of the market potential in the form of interactive discussion and activity patterns performed. The marketing variables are selected according to the Kotler's marketing mix model: product, price and marketing communication.<sup>337</sup> The marketing in the ASP-model is illustrated in Figure 4.4.

Figure 4.4 Marketing in the advanced strategy-performance model



Any product and service comparisons among telephone companies are impossible, because information concerning individual telephone company specific services or service development investments is not available.<sup>338</sup> The product development costs are, however, included in the investments of the telephone company. It also transpired that in Finnet Group (FG) most of the services are launched by Elisa, FG affiliated companies, or their subsidiaries. Sonera has its own product development department.<sup>339</sup>

Because of the missing data, the product volumes of the individual telephone companies are constructed through the services sold to the market. The used variables are **the total call revenues, local-net revenues, data transmission revenues, number of mobile calls and mobile call minutes** as well as **long-distance calls and international calls**. They actually

<sup>337</sup> See e.g. Kotler, 1976

<sup>338</sup> E.g. ITU, 1997, reports difficulties to define Telecommunications services.

<sup>339</sup> Interviews: Arte, Kalm, Reinamo and Weckström.

define how efficiently the telephone company exploits its phone call market potential.<sup>340</sup> Local calls are one of the most important services for many telephone companies. However, telephone company specific local phone call data is not available, but the data is included in the total local-net revenues.<sup>341</sup>

At the beginning of the research period, The Ministry of Transport and Communications Finland regulated the list prices of telephone services. However, because of the special discounts granted to company customers, any actual service price data, which would cover the whole of the FTC, is not available. The best way to compose the price level of each telephone company is to use the total price levels, that is **the household price-basket** and **the company price-basket**, which include all the service prices offered on the market by the individual telephone company.<sup>342</sup> The price-baskets are constructed by The Ministry of Transport and Communications Finland in co-operation with the telephone companies. These price-baskets do not include discounts granted for the customers and therefore, they can be considered to describe the rough price levels. They do however provide a total picture of the pricing strategy followed by each individual telephone company.<sup>343</sup>

In order to learn more about the performance effects between the market and the telephone company, marketing communication is also included into the research model. Marketing communication constructs the competitive advantage by informing the market about the telephone company, services, prices, delivery, etc. It also sustains and develops customer relationships in several arenas and operational ways.<sup>344</sup>

It would have been interesting to examine the effects of the marketing communication investments and themes of individual telephone company performance in different market segments. Because of the serious shortcomings in data, only **the advertising expenditures**

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<sup>340</sup> Gordon and Milne, 1999, argue that to understand the dynamics of competitive environment, supply and demand side must be explored. In the present study the data transmission and mobile call information is not available as to individual telephone companies.

<sup>341</sup> According to Artte the local net revenues is defined as follows: telephone call revenues plus fixed-net revenues minus payments to other telephone companies.

<sup>342</sup> During the research period The Ministry of Transport and Communications Finland made minor changes into price-basket structures, which confront all telephone companies in the similar way. See Terävä 1996, p. 26; See also Suomen telemaksujen hintataso, 1992-1998. Liikenneministeriön julkaisu 14/1999.

<sup>343</sup> Interviews: Artte, Lehmus, Pere and Weckström. See also Terävä, 1996, pp., 2-3.

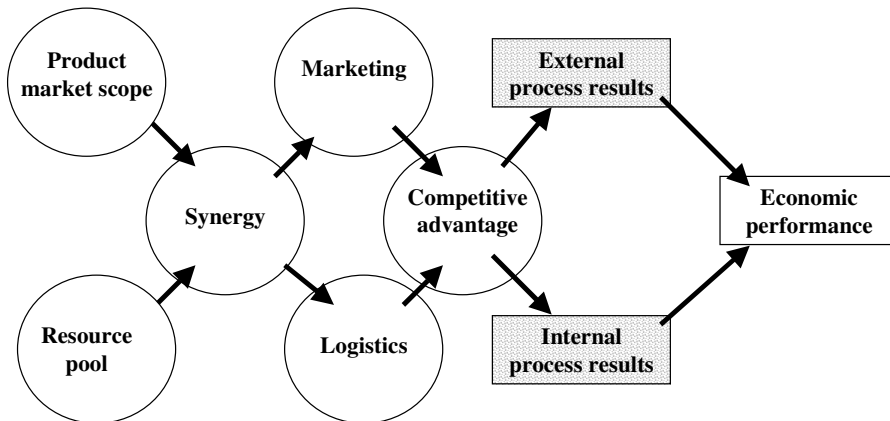
<sup>344</sup> Majumdar, 1998, argues that firms have little control over the phone call volumes, but they can influence on the rate at which revenues are earned. Schultz, 1996, argues that it is important to notify that information shift is moving also to the customers.

of the telephone company were available to represent the marketing communication variable.<sup>345</sup> In addition to the data of the individual telephone companies, the respective information from FG affiliated companies is used to support the interpretations to be made from the marketing communications effects.

### Process results

In the advanced strategy-performance model the strategy process results show the level of the competitive advantage of the firm. The results are the preceding stage in the model before the economic performance of the firm. This is shown in Figure 4.5.

Figure 4.5 Process results in the advanced strategy-performance model



The process variables in the strategy-performance model are categorised into internal and external process results depending on the data source. The main internal strategy process result variables to be used in this study are **internal efficiency** and **personnel research results**. The first internal efficiency variable category is constructed by dividing the total sum of personnel costs and fixed assets by the turnover of the telephone company. The figure explains the ability of a firm to allocate internal chains efficiently. For example,

<sup>345</sup> See Porter, 1980. See also Barney, 1997, p. 72, who stresses brand identification and customer loyalty. Oster, 1982, has found that high advertisers outperformed low advertisers. In the present study, only Elisa gave marketing expenditure data from the whole research period. Data from other the FG members is available only as total sum. Marketing expenditure data of Sonera is available only from years 1994-1996. The data from years 1992 and 1993 could not be reconstructed, because the marketing director refused to give the information needed.

Patton has discovered that production efficiency is interrelated with the profitability and the market share of the firm.<sup>346</sup>

The object of the internal personnel research was intended to discover additional supportive valuable perspectives in the strategy-performance connections, especially in the strategy implementation processes of the firm. The research was carried out in 1998. Unfortunately, only one strategic group participated in the internal personnel research. In the present research, the company image and the service level variables are the same as those used in the market research (See Table 4.1). In addition to these variables, the personnel were asked to evaluate the strategy implementation with the help of the following additional specified variables presented in Table 4.2.

Table 4.2 The internal personnel research variables

Strategy process variables			
Value definition participation	Values in writing	Company value knowledge	Active company value use
Strategy definition participation	Strategies in writing	Strategy knowledge	Operation definition participation
Yearly operations in writing	Operation knowledge	Operative target orientation	Operative target follow-up
Customer orientation	Customer need monitoring	Customer relationship responsibility	Customer relationship responsibility in unit
Customer service system use	Competitor monitoring	Competitor operation knowledge	Competitor control

The external strategy process variables are **market power** and the **specified market research variables**. Other telephone company specific external process data is not available. In the current study, market power is defined as the total balance sheet of the telephone company. That is a surrogate of the total resources of a telephone company. Thus, the market defines the potential exploitation capability that the telephone company has achieved and the frames of the exploiting potential in future. For example, if market power is increased, a broader resource range of possibilities to exploit the market is created. The change of the strategic group membership also requires changes in market power because of the mobility barriers of the new strategic group.

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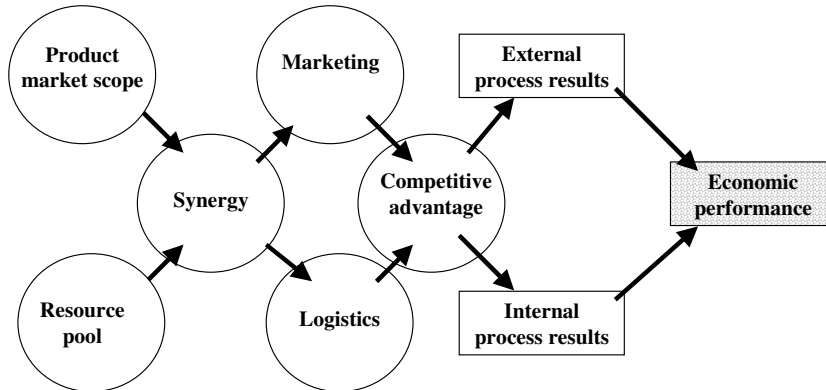
<sup>346</sup> Patton, 1977.

The market research results are used to complete the information in order to understand how the external strategy process contributes to the success of a telephone company. The role of the market potential evaluation becomes more important when the monopoly market changed towards an oligopolistic competitive environment.<sup>347</sup> The market research variables are the same as used in the observation of the company image and service level expectations presented earlier in Table 4.1. It must be noticed that these variables are not included in the statistical APS-model analyses, but analysed separately as supportive data.

### Economic performance

In many cases, in the telecommunications industry strategy studies, the performance variables have not always been economic ones.<sup>348</sup> In the present study, the focus is on the economic performance variables - the final outcomes of the synergy and the competitive advantage of the telephone companies. This is shown in Figure 4.6.<sup>349</sup>

Figure 4.6 Performance in the advanced strategy-performance model



<sup>347</sup> Ettenson and Turner, 1997, pp. 91 emphasise the role of creating customer relationships and understanding buyer behaviour because of the competitive pressure. See also Cool, 1985.

<sup>348</sup> Terävä, 1996, criticises that phone call volume has been the only performance variable in studies, despite that call services are just a service category.

<sup>349</sup> During the interviews e.g. share holder value was suggested as a performance variable: Weckström and Lehmus. As to the objectives of the present study the share holder value is not a suitable variable, because many of the telephone companies have mutual company form. See also Barney 1997, p. 60.

The problems of using only one performance variable are avoided by using **turnover share** and **profitability share** of the telephone company as performance variables. The turnover share is the proportion of the individual telephone company in the total FTC turnover. It measures how capable an individual telephone company has been in exploiting market potential compared with the other telephone companies in the market.<sup>350</sup> Profitability of a telephone company is defined as profitability before taxes and extraordinary items.<sup>351</sup>

#### 4.3 Data gathering and information sources

The versatile task to reconstruct strategies followed in the FTC requires extensive, relevant data from several sources.<sup>352</sup> Literature also suggests that the analyses have to cover a long time period to achieve relevant results.<sup>353</sup> The current study focuses on the unique period between 1992 and 1998 in the FTC, as it was in transition on the way to a new competitive environment. The large data base ensures that total comprehension is achieved and the right interpretations of the strategy-performance connections are constructed. Figure 4.7 shows data sources and model elements, in which the specific data is used.

The figure 4.7 shows that the data needed to measure the scope element is collected from public statistics, Statistics Finland and The Ministry of Transport and Communications Finland, which is also the origin of price-basket information in the marketing element. MDC-Mainostieto is the main information source for the advertising costs used in the marketing element of the model.<sup>354</sup> The industry specific statistics, financial statements of the telephone companies and internal company specific statistical data from the Finnet Group and Sonera is gathered to obtain relevant and reliable information for the variables in the model elements of the resources, the logistics and the marketing as well process and performance results.<sup>355</sup>

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<sup>350</sup> See also Porter in Rumelt 1994, p. 431. See also Doyle, 1994.

<sup>351</sup> Artte and Weckström argue that this definition is comparable among all telephone companies.

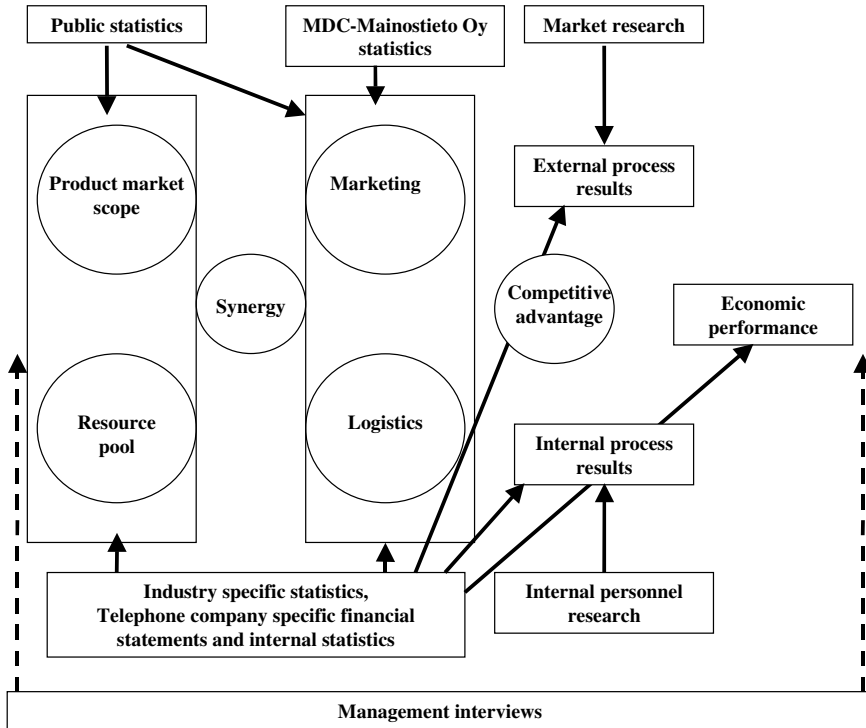
<sup>352</sup> Gordon and Milne, 1999, suggest to using of reviews of industry publications and manager, customers, suppliers or analysts interviews to get relevant total description of the industry.

<sup>353</sup> Many data sources were needed because of some problems with missing data. Porter 1994, p. 444, argues that it is not useful to approach the problem by considering the environment as relatively stable.

<sup>354</sup> MDC Mainostieto Oy is the leading company collecting advertising data from Finnish industries.

<sup>355</sup> The FG collects member information such as financial statements, personnel data, selling outlet information, number of accesses, and phone call statistics.

Figure 4.7 Research data sources



In addition to the statistical information sources, for the purposes of process results a market research including a large array of variables was carried out among company customer market segments of the telephone companies in 1998. The telephone company managers preferred these segments to be involved in the market research, because services are often launched first in the company market.<sup>356</sup> The objective of market research is to find out strategy process results, which expose relevant evaluations from the customer viewpoints to help in the final interpretation of statistics in the explanation of the firm's performance.<sup>357</sup>

<sup>356</sup> Interviews Artte, Kalm, Lehmus, Reinamo, Weckström. It must be noted also that because of costs, telephone companies refused to participate in market research, which would have covered their geographical household market. The costs are also the main reason, why market research was not performed two times during the research period, despite the remarkable changes in the competitive market. The market research process is presented in appendix 5. In general, the monopoly environment may have had an effect on the data collection as a whole: such as customer needs, marketing and customer relationship data-system support. On the other hand the technology statistics have been stored well.

<sup>357</sup> Cool and Schendel, 1987, state that market research helps to identify firm level characteristics. As the market research data of the present study includes limitations, it was not used in the advanced statistical analysis of the ASP-model, but as an important supportive data.



The internal personnel research has similar fundamental objects as the market research: That is to increase the understanding of the strategy implementation process. The variables of the internal personnel research were presented earlier in this chapter.<sup>358</sup>

Despite the extensive data gathering processes, the data includes some minor shortages as to some of the explanatory phone call variables. However, the missing data is replaced by using the widely approved regression imputation method.<sup>359</sup> The availability of some data areas are also restricted by the telephone company managers, who were cautious as to the activity consequences resulting from the competitive environment. However, these data shortages play a very minor role as to the strategy-performance interpretations of the present study. The data shortages are specified later as the research results are presented in chapter 5.

The manager interviews in the telephone companies play an important role in gathering relevant data and in avoiding incorrect analysis result interpretations.<sup>360</sup> Actually, interviews are a remarkable means of learning the strategic and operative reality of the telephone company. With these interviews, the validity and reliability of the present study are further increased.

It is impossible to enclose all the detailed and extensive research data from the several data sources that was gathered for the present study. Thus, the versatile data is collected to the data base, which is preserved by the author for possible utilisation.<sup>361</sup> This also ensures the confidentiality of the individuals and the institutions mentioned in the material. However, a number of examples of the authentic material are presented in the appendices.

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<sup>358</sup> The personnel research process is presented in the appendix 6.

<sup>359</sup> In the imputation method, each missing variable value in turn is explained by other variables. The method gives satisfactory valid estimates for the missing variable values. See more e.g. Little and Rubin 1987.

<sup>360</sup> E.g. Porac, 1989 argues that it is important to have shared perceptions of the strategy interactions and formulation with the organisations. The psychological reality of "the group" must be taken into account.

<sup>361</sup> The original data is available on request from the researcher.

#### 4.4 Data analyses

The data analyses were started by pooling the annual information of the individual telephone companies to the annual total FTC level. These industry level figures are used as a reference point of the development of the strategic group and the individual telephone companies during the research period of 1992-1998. This pooling covers all the statistical data sources and the market research carried out. A similar procedure was carried out to create the analysis data bases for the strategic groups.

According to the objectives of this study, the first task is to identify the strategic groups in the FTC. The size of the telephone company measured by the sum of the balance sheet is the clustering criterion to define the strategic groups. Ward's clustering algorithm method is used in the clustering procedure. The formula is presented in Figure 4.8.

Figure 4.8 Ward's clustering algorithm

$$W = \sum_{i=1}^G \sum_{j=1}^n (X_{ij} - \bar{X}_i)^2$$

where,  
**W** = is the internal value  
**G** = is number of groups  
**X<sub>ij</sub>** = is the j:<sup>th</sup> observation in the group i.

Ward's method minimises the overall sum of the cluster distances and produces solutions that are less influenced by individual cases and are therefore more stable. The method ensures that the size differences between groups are as big as possible.<sup>362</sup> To explore the stability of the strategic groups and strategic group memberships in the FTC, the clustering method was performed by observing the size differences between the telephone companies separately in every individual year of the research period, according to the validity propositions of the SG-discipline.

After having clustered telephone companies into strategic groups, several statistical methods are used to reconstruct the performance and the strategy patterns of the groups.

<sup>362</sup> E.g. Harrigan, 1985 have used Wards Clustering Algorithm. See more about clustering methods e.g. in Green and Tull (1978) p.450. Spath 1980; See also Fiegenbaum and Thomas, 1990; Gordon and Milne, 1999.

First, the strategic group data analyses are carried out with all the strategy and performance variables, excluding the market and internal personnel researches, which are realised only in the year 1998. The object was to see the variable value development on the industry and strategic group levels.<sup>363</sup>

To learn more on the strategy-performance connections, advanced statistic method was used. Despite some good regression analysis results in earlier the SG-discipline studies, regression analysis is not the best method for the present study.<sup>364</sup> The empirical data base is very heterogeneous, because of the remarkable size differences between telephone companies, because of their geographical environment, and because the amount of observations remains too few for the purposes of the regression analysis.<sup>365</sup> Also the high multicollinearity between many of the explanatory variables may lead to several different interpretations - also false ones. The empirical data breaks also down the requirement of the independent variables.<sup>366</sup> Thus, the regression analysis was replaced by the principal component analysis method as the most appropriate analysis method.

Principal component analysis method leads to unique reproducible results and increases the reliability of the strategy-performance connection identification among strategic groups.<sup>367</sup> The method constructs a set of associated variables in terms of mutually uncorrelated linear combinations of those variables. The first combination accounts for the major part of the variance in variables.<sup>368</sup> Each of the following combinations accounts for a decreasing proportion of the variance in the original variables and are uncorrelated to the previous combinations.<sup>369</sup> The method helps to find the most substantive interpretation constructs behind the most relevant strategy and performance variables. It cannot be applied separately

<sup>363</sup> Lewis and Thomas, 1990, discuss the advantages of longitudinal analyses in strategic group research.

<sup>364</sup> E.g. Hatten, 1974, used regression analyses to demonstrate the explanatory power and theoretical consistency of separate regression models of the profit-impact within each strategic group and compared with the regression parameters estimated for the industry as a whole. Hatten and Schendel 1977. Lahti, 1983a, showed strategy-performance explanatory power by using regression analysis in the knitwear industry.

<sup>365</sup> In the National Group and the Helsinki Group the number of observations remains too few: only seven observations with variables more than six. Thus, regression analysis cannot be carried out within the groups.

<sup>366</sup> The observations are taken from sequential years 1992-1998. Using differences between different years might have helped with the problem, but again one observation would have been lost.

<sup>367</sup> Nath and Sudharshan, 1994, used principal component analysis to explore long-run strategy effects in the strategic groups. See also Green and Tull, 1978, p. 429.

<sup>368</sup> Churchill, 1979 p. 563. Green and Tull, 1978, p. 428 and p. 431, recommend that researchers should use components which account for 70-80 % of the total variability in the original data.

<sup>369</sup> Green and Tull, 1978. Churchill, 1979, p. 557 argues that principle-component analysis is one of the more popular "analysis of interdependence" techniques in market research.

to the individual variables in the strategic groups with only one member, because of the small amount of observations. The total results give, however, powerful qualitative information of the strategy directions followed.

To learn more about the dynamism of the strategy and performance directions of the telephone companies in the changing environment, the second phase of analyses was carried out with the statistical data from the years 1995-1998. The aim was to produce information about the changes in the strategies and performance of the strategic groups after the de-regulative actions. Because of the remarkable changes in the industry the strategies and the performance of telephone companies are expected also to be changed.<sup>370</sup> The performed procedures are the same, which are carried out with the total data.

Direct distributions, means and students' t-tests were used as analysis methods in the market research and internal personnel research.<sup>371</sup> The aim was to find total profiles of the strategic groups, instead of the changes in solitary variable values. This procedure fits well with the total strategy-performance approach of the present study.

The last analyses of the current study try to define the strategies of the best and the worst performing telephone companies in each of the strategic groups. The two best and the two worst performers in each of the strategic groups are observed in terms of strategy-performance connections.<sup>372</sup> The similar longitudinal procedures, which were used to explore strategic groups, were also carried out among the best and worst performers.

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<sup>370</sup> Jeffrey R Williams in Rumelt, 1994, pp. 239-240 distinguishes three categories of rivalry environments: static (slow cycle), traditional (standard cycle) and dynamic (fast cycle). He argues that in slow cycle rivalry firms rely on the creative talents of individuals to produce one-of-a-kind products and services in fragmented markets. In standard cycle rivalry firms are shaped by extended rivalry in mass-markets by volume based production processes. In this kind of rivalry long run commitment is required to sustain scale advantage.

<sup>371</sup> See more about the methods e.g. in Green and Tull, 1978.

<sup>372</sup> Lewis and Thomas, argue that each strategic group includes companies, which create the core of the strategic group, and which remains stable, while some group members may change their strategy.

#### 4.5 Research validity and reliability

Each study confronts fundamental measuring questions concerning validity and reliability. The researcher must answer the validity question: Is it measured what it is intended to measure? It means the precision and compact definition of the theoretical construct form of the research towards external and internal validity.<sup>373</sup>

The external validity, the ability to generalise the results of this study, is high, because almost all the telephone companies in the FTI are included. It is also high because all the strategy-performance model variables are selected according to the recommendations of previous strategy management studies. This was discussed earlier in chapters 2 and 3, as the ASP-model variables were chosen to be applied in this study. However, the most important validity issue is: "Is it reasonable to measure individual strategic groups instead of the total industry?". Actually, the preliminary analysis of the heterogeneous empirical data from the FTC produced a strategy-performance model, where one variable alone would almost totally explain the performance in the FTC because of the heterogeneous telephone companies.<sup>374</sup> The results from the SG-discipline, which has studied strategy-performance in many industries, further strengthen the validity of the measurement construct followed in the present study. Thus, the external validity provides good answers to every requirement of a valid research approach.

According to Tashakkori and Teddlie, the internal validity refers to "*The degree to which we can trust the conclusions of the researcher regarding the 'causal' relationship between variables/events. Internal validity exists if you are confident that the obtained relationship between variables is real, rather than spurious*".<sup>375</sup> The internal validity of the holistic strategy-performance frame model is of a high level, thanks to the theories behind it and because of the strategy-performance research results from several industries.<sup>376</sup> This is discussed in chapter 2.

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<sup>373</sup> See the discussion e.g. in Tashakkori and Teddlie, 1998, pp. 65-68.

<sup>374</sup> The regression analysis was carried out including all the data from all the telephone companies. This preliminary analysis showed that the size of the personnel would have been the only strategy variable with a 98 % explanation level in the final strategy-performance model. However, the heterogeneous data produces unacceptable results.

<sup>375</sup> Tashakkori and Teddlie, 1998, p. 67-68.

<sup>376</sup> See Lahti, 1983a; Killström, 1989. Salimäki 2003. Yin 1984 p. 34-36.

Altogether the validity and reliability were increased by collecting data from multiple independent sources. Hatten argues that research must also face validity for managers in the industry and the strategic groups.<sup>377</sup> This requirement is answered via the FTC management interviews. The managers' recommendations are respected especially as the variables were chosen. There are therefore no spurious features in the validity of this study. As to the internal validity, it must be noted that the ASP-model is not a pure explanation model. It is only the strategy and performance directions of telephone companies that can be identified.<sup>378</sup> Together, the variables show the total directions between strategy and performance.

Measurement instruments that give error free results increase research reliability. *"If the measurement instrument is reliable, it should provide the same results consistently over time across a range of items and across different rates"*.<sup>379</sup> The accuracy of the statistical data collected is controlled by authorities, managers in the FGA, and Sonera. In addition Economy Newspaper and magazine articles have also been used as a supportive data.<sup>380</sup> Thus, the reliability of this data is expected to be on a high level.

As to the market research and internal personnel variables in the present study, the validity and reliability are also on a high level.<sup>381</sup> In many studies the market research variables might have been chosen from *ad hoc* bases. In the present study, however, the quality of the validity and reliability of the market research variables were verified through the manager and authority interviews. The same variables have been used in market researches carried out by the large telephone companies and The Ministry of Transport and Communications Finland. There is no reason to doubt the professionalism of the managers or authorities interviewed. The large number of respondents as well in the market research and in the internal personnel research increases the good reliability level. The reliability of the results was checked out afterwards by the managers.

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<sup>377</sup> Hatten, 1974 argues that without face validity managers can't evaluate the results against their experience.

<sup>378</sup> This follows the statements of Ansoff 1975 and Lahti 1983a, p.78.

<sup>379</sup> See Tashakkori and Teddlie, 1998, p.83.

<sup>380</sup> See more e.g. ESOMAR, 1998b, pp. 111-112: validity and reliability aspects to be followed.

<sup>381</sup> See more e.g. in Eskola, 1981, pp. 77-81. See also Eskola and Suoranta, 2003, pp. 212-219.

The statistical methods used in the present study are proven to generate reliable results in the strategy-performance studies in the SG-discipline.<sup>382</sup> There is therefore no reason to suspect the reliability of this study either.

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<sup>382</sup> The data was inspected by the FGA, information and controller departments of Sonera.

## 5. THE EMPIRICAL RESULTS OF THE STUDY

This part of the study presents the results of the strategy-performance analyses during the period of 1992-1998. First, the strategic group identification results are under focus and then the results of the ASP-model variable values in strategic groups will be introduced. To increase the understanding of the strategy-performance connections, principal component analyses results will be presented. Furthermore, the market and personnel research results are taken under examination in order to support the interpretations of the results. The followed strategies will then be reconstructed together with the performance results in each strategic group. Finally, the strategy and performance of the best and worst performing telephone companies will be discussed to enlighten the strategy dynamism in the strategic groups.

### 5.1 Strategic groups among the Finnish telephone companies

The strategy management literature strongly argues that the size of the firm is the most appropriate criteria to be used in the clustering of firms into the strategic groups, as the connection between the resource allocation and the performance is defined. The telephone companies were grouped according to the size of their balance sheet.<sup>383</sup> As a result, four strategic groups are found. The clustering method is also logical regarding the geographical operational area of the telephone companies. The identification of strategic groups is constructed on an annual basis so as to learn of the possible strategic group or group membership changes during the research period. Despite the mergers and the resource development of the telephone companies, no changes in this respect can be identified.<sup>384</sup>

The **National Group** is formed by the biggest telephone company Sonera.<sup>385</sup> It has a balance sheet of FIM 16.7 billion (1998). The grouping distance to the nearest strategic

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<sup>383</sup> E.g. Dobrev and Carroll, 2003, p. 555, report size effects on the performance of the firm. They have found that aggregate size distances between the firms are significant as to the predicted effects on performance.

<sup>384</sup> The grouping procedure is presented in appendix 7.

<sup>385</sup> The names refer to the area, where the specific strategic group operated at the beginning of the research period. Also Barnett and Carroll, 1987, have found similar size and geographical location grouping dimensions among the early telephone companies in the USA during 1900-1917.



group is very obvious. Geographically, the National Group's operating area covers 80 % of Finland.

The **Helsinki Group** also consists of one member. Elisa's grouping distance from other strategic groups is also very clear with its balance sheet of FIM 4.7 billion (1998). The operating area of this strategic group is the capital city of Helsinki and its neighbouring areas.

The **Regional Group** consists of nine members. The balance sheet value of these telephone companies varies from FIM 0.3 billion to FIM 1.1 billion (1998). The members of this strategic group operate in the large cities and surrounding areas, except the Helsinki region.

Finally, the remaining 39 telephone companies belong to the **Local Group**. The balance sheet of these companies varies from FIM 3 million to FIM 100 million (1998). They are mainly operating in the small rural areas.

These grouping results support the earlier SG-discipline findings. The results clearly show the differences in the total resources between strategic groups in the FTC. The results are also parallel to the changes of the empirical geographical operating areas of the telephone companies.<sup>386</sup> Thus, the size of the telephone companies is proven, along with the recommendations presented earlier in the theoretical part, to be relevant grouping criteria.

## 5.2. Strategy and performance differences between strategic groups

The development of the ASP-model variables values during 1992-1998 are discussed next. The following sections give a holistic picture of the strategy-performance development directions followed in the strategic groups.

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<sup>386</sup> Nath and Gruca, 1997, found that location is important to the structure of the hospital industry.

### 5.2.1. Strategic groups' scope market potentiality

The market potential affects the use of services and the performance of the telephone company. These potential elements, that is the number of the company and the population potential as well as the changes in the cumulative taxes in the operational area of the strategic groups, are presented next.

#### Number of the company potential

Due to the depression in Finland, the number of the companies on the market generally diminished during the first four years of this research. However, during the whole research period, the amount of companies grew by 1.0%. The differences of the company potential in the strategic groups are presented in Figure 5.1.<sup>387</sup>

Figure 5.1 Strategic group potential, number of companies

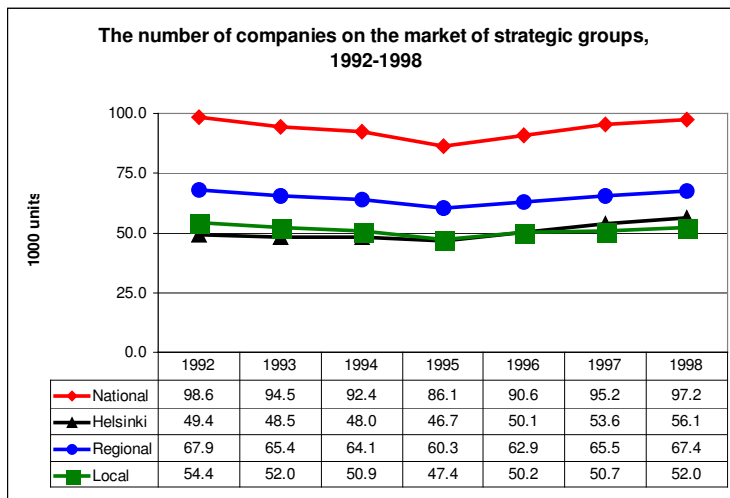


Figure 5.1 shows that during the first years of the present study, the company potential decreased most in the operational area of the National Group. The number of companies decreased from 98.6 thousand in 1992 to 97.2 thousand in 1998, the decrease being 1.4%.

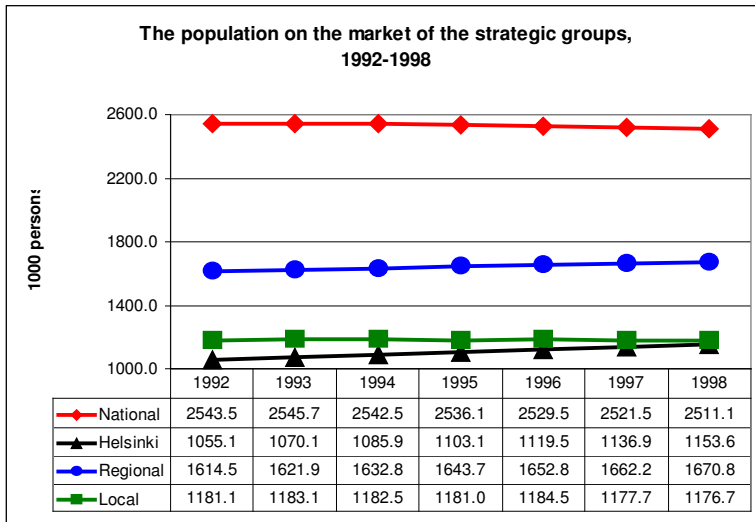
<sup>387</sup> The number of firms in the table is more than the total number of companies in Finland. This is because areas exist, in which several telephone companies operate. Statistic Finland, Corporate enterprises and personal business in Finland, from 1992 to 1998

Actually, all the strategic groups have diminishing numbers - excluding the Helsinki Group, where the depression had only a temporary decreasing effect on the company potential. It is only within this area, where the company potential grew - by 13% in total from 49.4 thousand in 1992 to 56.1 thousand in 1998. After 1995, the company potential of the Regional Group nearly recovered to the level of 1992. Still, the decrease in this strategic group was from 67.9 thousand in 1992 to 67.4 thousand in 1998. The growth rate is negative, namely -0.74%. In the Local Group, the decrease of the company potential is clearly more significant than in the other strategic groups, that is from 54.4 thousand in 1992 to 52.0 thousand in 1998. The decrease is as high as 4.4 %.

### Population

The population is also a source of potential for the FTC. It grew by 1.9% in total between 1992 and 1998 in Finland and the growth was positive every year. The changing population and company development in strategic groups is also the consequence of the population concentration to cities in Finland.<sup>388</sup> Figure 5.2 shows the population development.<sup>389</sup>

Figure 5.2 Strategic group potential, population



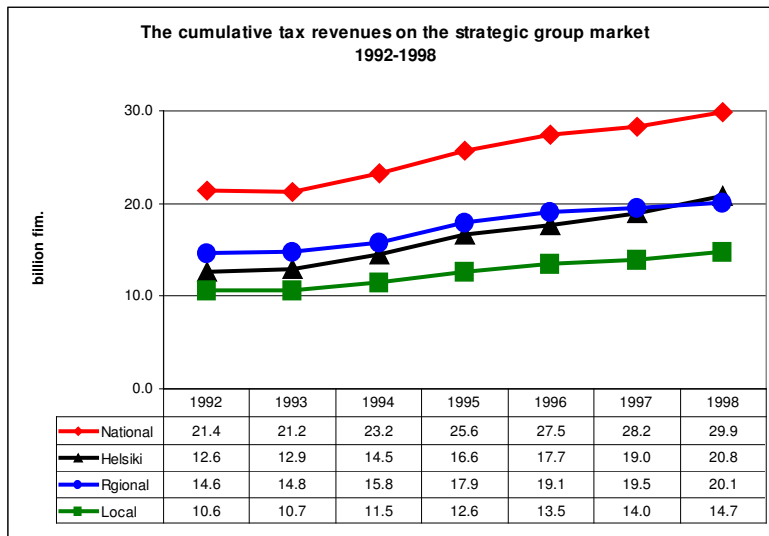
<sup>388</sup> Statistics Finland, Population structure, from 1992 to 1998

The population growth shows negative numbers in the areas of the National Group, from 2543.5 thousand in 1992 to 2511.1 thousand in 1998. The decrease is 1.27%. The population of the Local Group's market also decreased, from 1181.1 thousand in 1992 to 1176.7 thousand in 1998. The proportional decrease concerning this group is 0.4%. The growth figures inside the operating areas of the Regional Group are from 1614.5 thousand in 1992 to 1670.8 thousand in 1998, the growth rate being 3.5%. of the population of the Helsinki Group's market grew from 1055.1 thousand in 1992 to 1153.6 thousand in 1998. This growth of 9.33% is clearly the fastest among all strategic groups. In this area, the population grew every year during the research period.

### Tax potential

The income and property levels of the operational environment of the telephone company have an influence on the performance of the telephone company. The tax revenue statistics presented next follow the general economic development of the different regions in Finland.<sup>390</sup> The development of cumulative tax revenues in the operational area of strategic groups are illustrated in Figure 5.3.

Figure 5.3 The cumulative taxes on the strategic group market areas



<sup>389</sup> Because areas exist, where several telephone companies are competing, the total size of the population in all the strategic groups combined is more than the population of Finland.

<sup>390</sup> Statistics Finland, Statistics of Income and Property, from 1992 to 1998

During seven years, the accumulated tax revenues in the areas of the FTC developed from FIM 59.3 billion in 1992 to FIM 85.5 billion in 1998. The growth was 22.8%, and the growth was positive in all operative areas of the strategic groups. The growth differences are, however, remarkable as the figure above shows. During the first two research years, the development is moderate, but afterwards the development intensified steadily in the areas of every strategic group.

The Helsinki Group area with its 31.6% growth tax revenues developed at the fastest rate. The cumulative tax amount grew from FIM 12.6 billion in 1992 to FIM 20.8 billion in 1998. The Regional Group reached the growth rate of 22.9% and the total tax revenues went from FIM 14.6 billion in 1992 to FIM 20.1 billion in 1998. The National Group and the Local Group have clearly lower growth rates. In the National Group area the growth rate was 19.7%, from FIM 21.4 billion in 1992 to FIM 29.9 billion in 1998. In comparison the Local Group had a growth rate of 18.7%, from FIM 10.6 billion in 1992 to FIM 14.7 billion in 1998.

#### Expectations of the scope market<sup>391</sup>

The market expectations, as the expression of image and the service needs, should play an important role, as the activity patterns are planned and carried out by the telephone companies. The image expectation results of the strategic group scope market are presented next, as supportive data for this study. The focus of the observation is more on the total profile than on the individual variables. That is also why only the most important image and service level results are under focus in the next presentation. The ranking was calculated with the help of the correlation of the realised total service level mean.<sup>392</sup> The presentation begins with the National Group as illustrated in Figure 5.4.

The image expectation values in the National Group as a totality are higher than in the rest of the strategic groups in the FTC. As to the individual variables, as many as 81.2% of the respondents mentioned that 'reliability' is the most important feature in the telephone

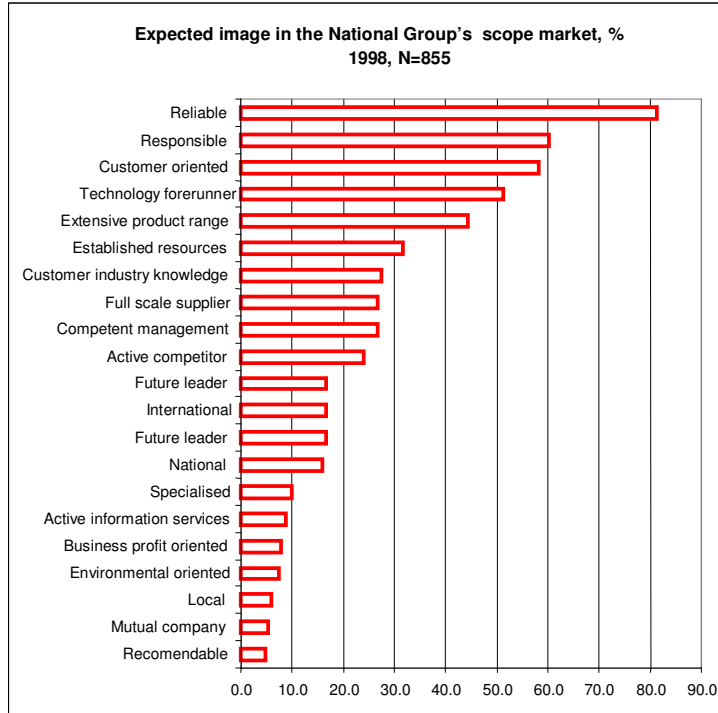
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<sup>391</sup> More detailed figures are presented in appendix 5.

<sup>392</sup> The mutual correlation was calculated between the total service grade and the individual service variable grade, evaluated by the respondents of the market research.

company image. The following features in the ranking are 'responsibility' (60.3%), 'customer orientation' (58.1%), 'technology forerunner' (51.3%) and 'extensive product range' (44.4%). They are followed by 'customer industry knowledge' (27.4%), 'full scale supplier' (26.8%), 'competent management' (27.7%) and 'active competitor' (23.9%). The remaining variables play a minor role in the image expectations.

Figure 5.4 The expected image of the National Group's scope market

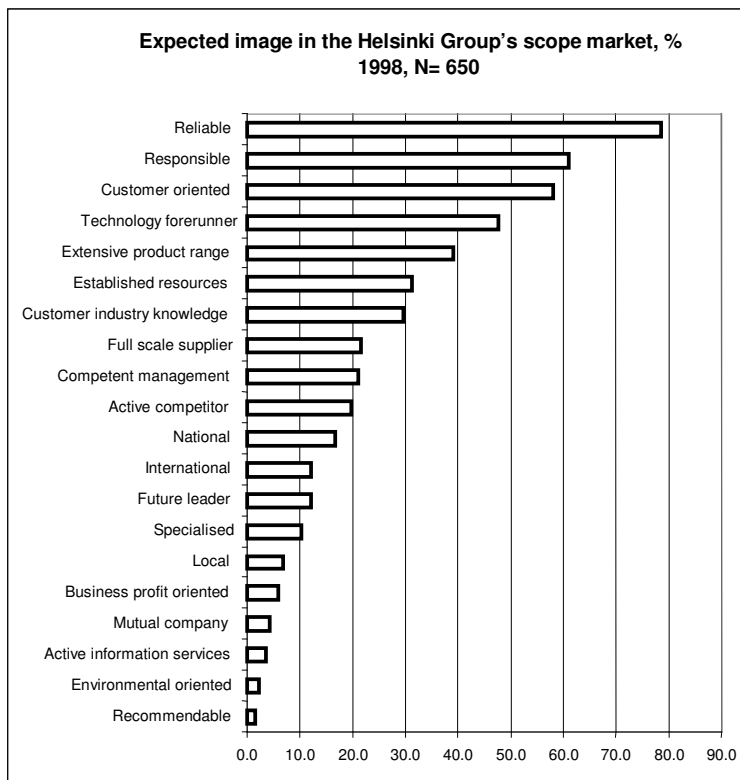


In addition to the image expectations of the National Group scope market, the service level expectations are also measured, and the individual service level variables are ranked according to their importance to the strategic group scope market. According to the results, the highest correlation values are in the variables that refer to human interaction and customer relationship maintenance: 'after sales service', (the correlation is 0.76), 'service willingness' (0.71), 'service speed' (0.71) and 'flexibility in customer service' (0.70). A further eight variables exceed the correlation level of 0.6: 'professional ability' (0.69), 'customer contact intensity' (0.68), 'service kindness' (0.66), 'user guidance' (0.65), 'maintenance' (0.65), 'quality-price relationship' (0.63), 'quality of contact person' (0.62) and 'services' reach level' (0.61). According to these results, customers expect services that

stress the functional service quality aspects. The rest of the correlation values in the National Group are under the level of 0.6.

The results in the Helsinki Group show that the most important company image expectation variables are attached to the customer relationship, to the technically advanced products and to the extensive product range. The results from the Helsinki Group are illustrated in Figure 5.5, which shows that the image expectation total profile of the Helsinki Group is very similar to the National Group in terms of the ranking of the variables and numerical results.

Figure 5.5 The expected image of the Helsinki Group's scope market



According to the respondents, four variables are especially important: 'reliable' (78.5%), 'responsible' (61.0%), 'customer oriented' (57.9%) and 'technology forerunner' (47.6 %). 'Extensive product range' (38.9%) and 'established resources' (31.2%) exceed the level of 30%. The remaining variable values are under this level, such as 'customer industry knowledge' (29.6%), 'full scale supplier' (21.4%) and 'competent management' (21.1%). The

expectation emphasis on the Helsinki Group market is primarily on areas of the customer relationship, rather than technology and product range, as it was in the National Group.

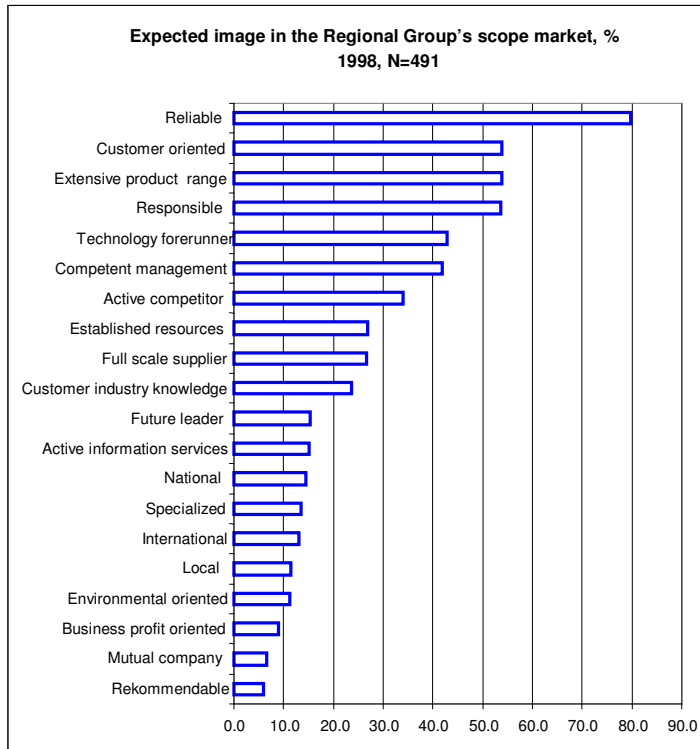
In addition to the image expectations in the Helsinki Group the most important service level variables, which are most correlated with the total service level mean, are 'service speed' with the correlation of 0.74, 'after sales service' (0.68), 'professional ability' (0.63), 'fluent deliveries' (0.62), 'maintenance' (0.61) and 'service kindness' (0.60). The remaining large majority of the variables do not reach the correlation level of 0.60.

In total, the image expectation profile in the Regional Group reaches about the same level as the strategic group results presented above. There are, however, differences as far as individual image feature values are observed. This can be seen in Figure 5.6, which presents the image expectation profile results of the Regional Group. In all, 79.7% of the respondents in the Regional Group state that 'reliability' is the most desired image feature of the telephone company. The next variable values in ranking are 'customer oriented' (53.9%), 'extensive product range' (53.7%) and 'responsible' (53.7%). 'Technology forerunner' (42.7%), 'competent management' (41.7%), 'active competitor' (34.0%), 'established resources' (26.8%), 'full scale supplier' (26.6%) and 'customer industry knowledge' (23.5%) follow. The rest of the variables fall below the 20% level. In the Regional Group, image profile customer relationships and product expectations are "mixed" on the same expectation level.

In addition to the image expectation results, the Regional Group's service level importance is calculated by the correlation method. Altogether, 14 out of the 20 service level variables exceed the correlation level of 0.6. 'Customer flexibility' has the highest rank position with the correlation value of 0.82. 'Willingness to serve' (0.79), 'service kindness' (0.76), 'service speed' (0.76) and 'user guidance' (0.74) follow in the variable value ranking. 'Contact person's personality' (0.72), 'quality-price relationship' (0.71) and 'information on products' (0.70) exceed the correlation level of 0.7. Also 'contact frequency' (0.69), 'professional ability' (0.68), 'after sales service' (0.67), 'maintenance' (0.67) and 'reach of services' (0.62) exceed the correlation level of 0.6. It is noteworthy, that only seldom the technical service quality variables reach the correlation level of 0.6. According to the results, the Regional Group's customers tend to prefer functional service features.



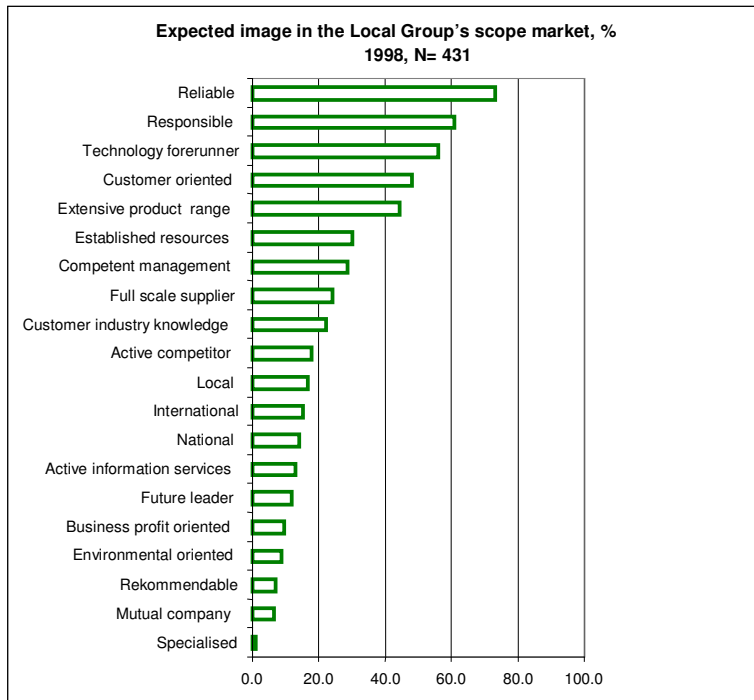
Figure 5.6 The expected image of the Regional Group's scope market



Finally, the company image expectations of the scope market are measured in the Local Group. The main results are illustrated in Figure 5.7.

The figure shows that like in the other strategic groups, 'reliability' (72.9%) is foremost of the image expectations in the Local Group. The next features in the ranking are 'responsibility' (60.6%) and 'forerunner in technology' (55.7%). 'Customer orientation' exceeds the level of 40% by its 47.9% as well as the variable 'extensive product range' by the level of 44.3%. 'Established resources' (30.0%), 'competent management' (28.4%), 'full scale supplier' (23.9 %) and 'customer industry knowledge' (22.0%) variables reach a level of 20%. The rest of the variables, which do not reach the level of 20% have only a minor role in the expectation profile. Thus, the image expectations of the Local Group's market are rather similar compared with the other strategic groups, but there are differences in the individual image features.

Figure 5.7 The expected image of the Local Group's scope market



The Local Group's service level profile is measured along the same procedures as in the other strategic groups. In this strategic group the highest correlated variables are 'professional ability' (0.81), 'service willingness' (0.77), 'product information' (0.76), 'service speed' (0.72), 'service selection' (0.72) and 'after sales service' (0.72). In addition several variables exceed the correlation level of 0.6: 'reach of services' (0.68), 'quality-price relationship' (0.63), 'service kindness' (0.61), 'contact frequency' (0.61), 'maintenance' (0.61), 'contact person' (0.60) and 'customer flexibility' (0.60).

In summary, as can be seen from the image expectations and service importance correlation results, there are some differences between strategic groups. There are also differences in the total expectation levels and in the results of individual expectation features. The most relevant results are summarised in Tables 5.1 and 5.2.

According to the customers in every strategic group, 'reliability' is the most expected image variable. The results show that strategic groups with bigger sized telephone company members, consider this feature to some extent to be a higher expectation level than the

smaller sized group members in the Local Group. It also seems that 'customer orientation' as an expected image variable grows in importance as the size of the strategic group members increases.

Table 5.1 The most important image expectations in the strategic groups

<b>Expected Company Image</b>							
The amount of respondents, who consider the feature to be important in the image of the telephone company							
National Group		Helsinki Group		Regional Group		Local Group	
Attribute	%	Attribute	%	Attribute	%	Attribute	%
Reliability	81.2	Reliability	78.5	Reliability	79.7	Reliability	72.9
Responsibility	60.3	Responsibility	61.0	Customer orientation	53.9	Responsibility	60.6
Customer orientation	58.1	Customer orientation	57.9	Responsibility	53.7	Technology forerunner	55.7
Technology forerunner	51.3	Technology forerunner	47.6	Extensive product range	53.7	Customer orientation	47.9
Extensive product range	44.4			Technology forerunner	42.7	Extensive product range	44.3
				Competent management	41.7		

'Responsibility' is the second important variable in all the strategic groups. The advanced technology and extensive product range are also on the top of the list in every strategic group, although the importance value varies between them. Thus, as a totality, the image expectations in different strategic groups are focused on the same image variables, but the weight of those variables varies between strategic groups.

The service correlation results show clearly more individual differences between strategic groups than the results of the expected image results. The summary of the service correlation in strategic groups is summarised in Table 5.2.

Table 5.2 The most correlated service features in the strategic groups<sup>393</sup>

Importance of service features (according to correlation analyses)							
National Group		Helsinki Group		Regional Group		Local Group	
Attribute	Corr.	Attribute	Corr.	Attribute	Corr.	Attribute	Corr.
After sales service	0.76	Service speed	0.74	Customer flexibility	0.82	Professional ability	0.81
Service willingness	0.71	After sales service	0.68	Service willingness	0.79	Service willingness	0.77
Service speed	0.71	Professional ability	0.63	Service kindness	0.76	Product information	0.76
Customer flexibility	0.70	Fluent deliveries	0.62	Service speed	0.76	Service speed	0.72
Professional ability	0.69	Maintenance	0.61	User guidance	0.74	Service selection	0.72
Contact frequency	0.68	Service kindness	0.60	Contact person	0.72	After sales service	0.72
Service kindness	0.66			Quality-price relationship	0.71	Reach of services	0.68
User guidance	0.65			Product information	0.70	Quality-price relationship	0.63
Maintenance	0.65			Contact frequency	0.69	Service kindness	0.61
Quality-price relationship	0.63			Professional ability	0.68	Contact frequency	0.61
Contact person	0.62			After sales service	0.67	Maintenance	0.61
Reach of services	0.61			Maintenance	0.67	Customer flexibility	0.60
				Reach of services	0.62	Contact person	0.60

In the Helsinki Group, the technical service features are most often on the top of the service ranking list. It is also worth noting, that there are quite a few service variables that are highly correlated with the opinions of the market research respondents. This represents heterogeneous service expectations. In the Regional Group, the variables with high correlation measures are most often functional service variables. Therefore, the Regional Group, the National Group and the Local Group service total profiles relate to each other. The individual correlation values, however, vary within these total profiles, which means that image and service expectations in the strategic groups differ from each other. The table shows that there are service level expectation differences between the strategic groups.

<sup>393</sup> The meaning and method of calculating the correlation was presented earlier in chapter four.

### Summarising the scope element results

The development of the potential, the image and service expectation results of the scope show many differences between the strategic groups, as summarised in Table 5.3. The frames for performance gain therefore create different exploitation possibilities for the strategic groups. It is only inside the Helsinki Group operational area, where the population and the number of the companies increased remarkably. All the remaining strategic groups in the FTC have a negative growth figures in this respect. The Helsinki Group area is also clearly on top of the development in accumulated taxes. The figures in Table 5.3 also show that the more the individual strategic group operates in the rural areas, the smaller the increase in numbers is.

Table 5.3 The changes in the volume of the scope market in the strategic groups

Changes in scope, %	National Group	Helsinki Group	Regional Group	Local Group
Population on the scope market	-1.7	9.3	3.5	-0.4
Companies on the scope market	-0.2	13.6	-0.7	-4.4
Tax revenues on the scope market	19.7	31.6	22.9	18.7

The image expectations between the scope markets of the strategic groups are rather similar as a whole. However, the emphasis of the individual image variables varies among the strategic groups. In the strategic groups with bigger members, 'reliability' and 'customer orientation' have to some extent a greater role than in the other strategic groups. The service quality variable differences are greater than the image expectations. The technical service features are emphasised especially in the Helsinki Group. In other strategic groups, functional service quality features get a greater role.

Altogether, the scope results have an important demand reflecting explanatory role as to the performance of the strategic groups. The synergy between market expectations and effective resource allocation is also needed. Thus, attention is next turned to resource development in the strategic groups.

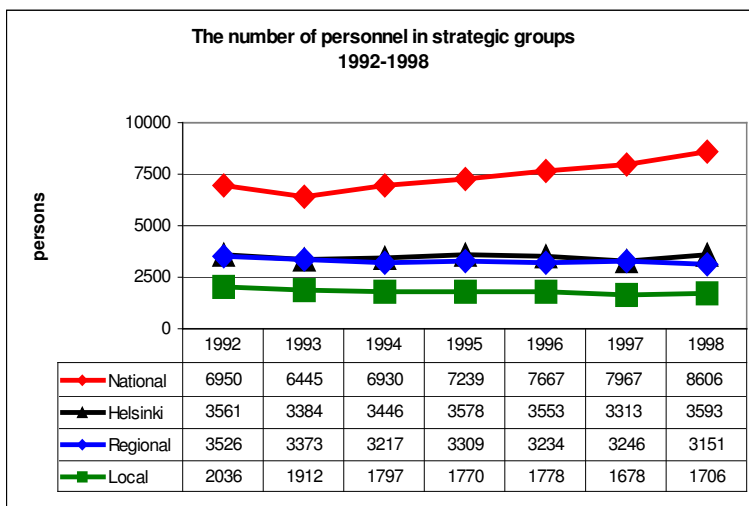
### 5.2.2. Resources for the synergy construction

The importance of resource allocation as an economic performance creating element is emphasised in the ASP-model. Thereby, it is interesting to see that the development of resources also shows differences between strategic groups. The results of human, organisational, technological, financial and physical resources are presented next.

#### Human resources

The first explanatory human resource variable is the number of employees. The other two human resource variables are categorised according to the basic education of the telephone company personnel. The total number of employees in the FTC was over 16000 in 1992. During the research period, it increased by 6.1% to over 17000. Figure 5.8 shows that the development is dissimilar in different strategic groups.

Figure 5.8 Employees in the strategic groups



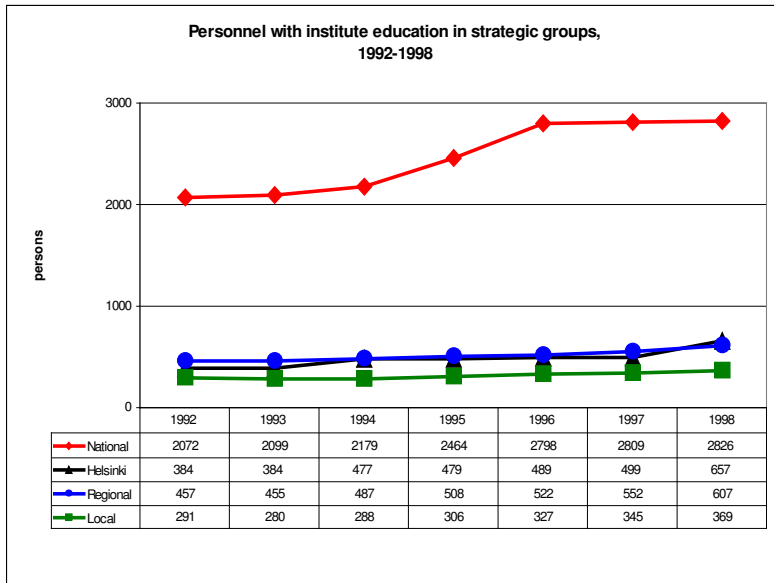
The National Group increased its personnel by as much as 23.8%. In 1992, it had 6950 employees and in 1998 this figure had risen to over 8600. The Helsinki Group recorded only a small 0.9% personnel increase. The personnel amount grew from 3561 in 1992 to the amount of nearly 3600 in 1998. In the two remaining strategic groups, the personnel size decreased during the research period. In the Regional Group it decreased by 10.6% from

3562 in 1992 to 3151 in 1998, and in the Local Group by 16.2% from 2036 in 1992 to 1706 in 1998.<sup>394</sup>

Despite the differences in the personnel amount development, the basic education level increased in all strategic groups. Figure 5.9 shows the amount of the employees with institute basic education in different strategic groups during the research period. The institute educated personnel grew by 40.2 % within the FTC.

The National Group has the greatest number of the institute basic educated personnel. During 1992-1998, the growth rate was 36.4%, reflecting the increase from 2072 to 2826 persons. Among the strategic groups, the Helsinki Group has the highest growth rate of 71.1%. The number of institute educated employees grew from 384 in 1992 to 657 in 1998. Growth rates are somewhat lower in the Regional Group and the Local Group. The Regional Group had 457 persons with institute basic education in 1992. This amount grew by 32.8% to 607 persons in 1998. In the Local Group, the growth rate is the smallest, that is 26.8% from 291 persons in 1992 to 369 persons in 1998.

Figure 5.9 Employees with institute education in the strategic groups

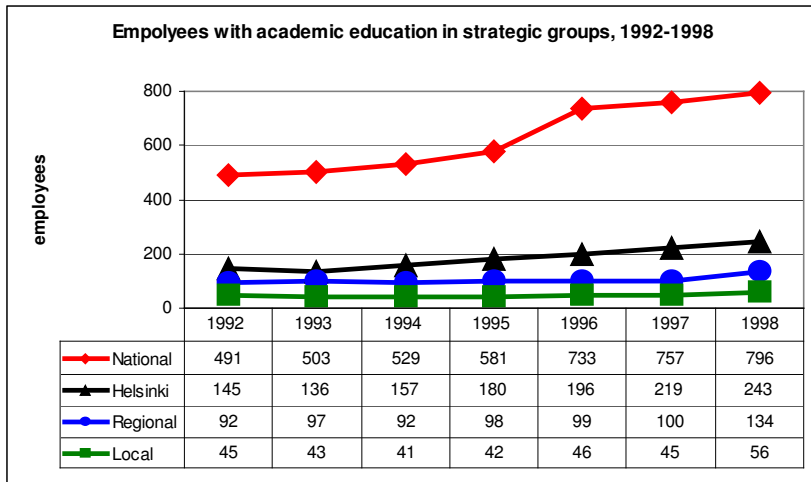


<sup>394</sup> Kajanto, 1997, p. 20 argues that digital switching increased the efficiency of telecommunications networks. This will also affect the personnel size of operators.

The amount of employees with academic education follows a similar pattern to that of the growth of the institute basic educated personnel. The growth rates are, however, remarkably higher. The total industry growth rate with academic educated employees is 59.1% between 1992 and 1998. In 1998, there were over 1200 academic educated persons in the FTC. Figure 5.10 shows the clear differences between strategic groups in terms of this resource variable.

The greatest absolute academic educated personnel and the growth rates can be found from the National Group. In 1992, it had 491 and in 1998 nearly 800 academic educated employees, the growth being 62.1%. In the Helsinki Group, the growth is 67.7%. It had 145 persons with academic education in 1992 and 243 in 1998. The Regional Group reached a growth level of 45.7% with its number of 134 academic employees 1998. In 1992 it had 92 employees with academic education. In the Local Group, the comparable figures are 45 in 1992 and 56 in 1998. The growth rate is 24.4%.

Figure 5.10. Employees with academic education in the strategic groups



In summary, despite that all the strategic groups increased the number of personnel with higher basic education all the human resource results show differences between the strategic groups. The National Group clearly invested most in its personnel size. Conversely, the strategic groups with small sized members, namely the Regional Group and the Local Group, clearly decreased their personnel. The total personnel size of the Helsinki Group remained on the same level as 1992, but among all strategic groups, it increased the



number of the better educated employees by the greatest margin. The development in the National Group follows similar resource allocations. It is obvious that the smaller the size of the members included in the strategic group, the less it invested in the development of personnel resources, during the research period.

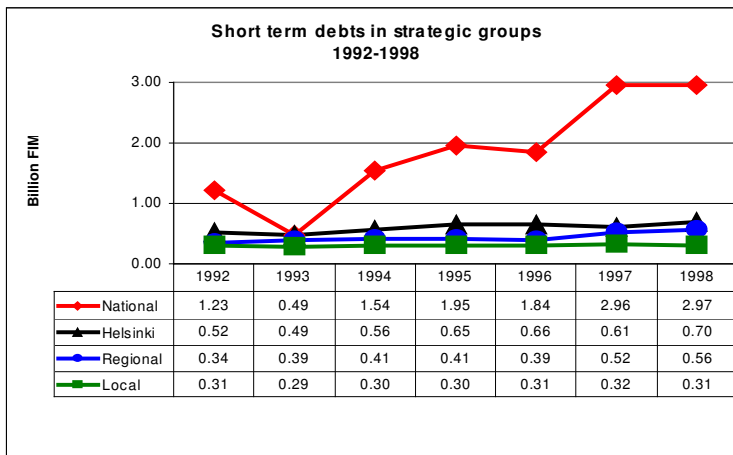
### Organisational resources

It would have been useful to see the organisational resource differences between the strategic groups. Unfortunately, the organisational resource results are missing because of the difficulties to obtain relevant data. However, the reflections of this resource are visible later in the strategy process results.

### Financial resources

In addition to human and organisational resources, the financial resources are an essential part of the advanced strategy-performance model. Next, the results of long and short term debts as well current as financial assets in strategic groups are presented. During the research period, the total change of the short term debts in the FTC was 89.1%. The total amount was over FIM 4.5 billion in 1998. The development differences of this variable value are remarkable between strategic groups. The short term debts of the National Group in particular follow a different kind of development path compared with the other strategic groups, as can be seen in Figure 5.11.

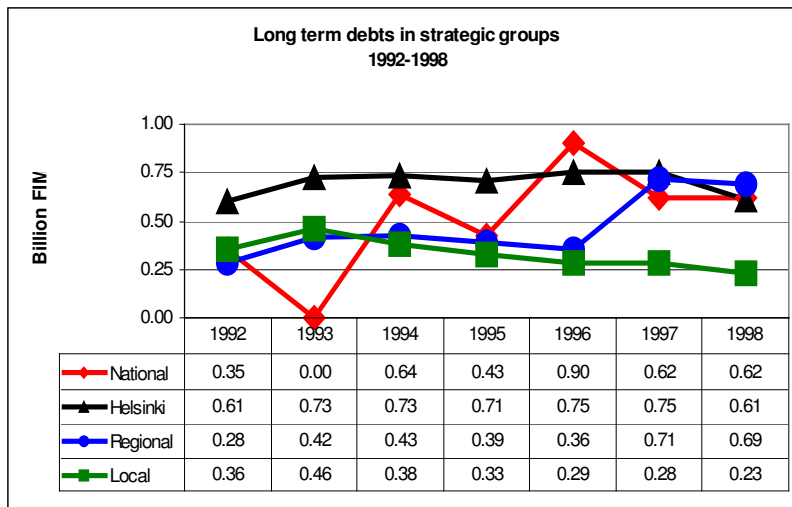
Figure 5.11 Short term debts in the strategic groups



In the National Group, the total short term debt growth is 141.6% between 1992 and 1998. In 1992 the debts were FIM 1.2 billion and nearly FIM 3 billion in 1998. The respective growth in the Regional Group is 63.3%, which resulted in FIM 0.56 billion in 1998. In 1992 this strategic group had short term debts FIM 0.34 billion. The growth development in the Helsinki Group was also 63.3%. The debts grew from FIM 0.52 billion in 1992 to FIM 0.70 billion in 1998. In the Local Group, the development of short term debts is very different compared to the other strategic groups. The amount of the debts remains on the lowest level in the FTC during the whole research period. Both in 1992 and in 1998 the short term debts were FIM 0.31 billion, the growth rate being only 0.3%.

The total debts consist of the short and long term debts. In 1998, the total long term debts in the FTC were FIM 2,152 billion. Between 1992 and 1998 the growth of these debts is 34.7%. Figure 5.12 shows that there are clear differences between the strategic groups in terms of development in the long term debts.

Figure 5.12 Long term debts in the strategic groups



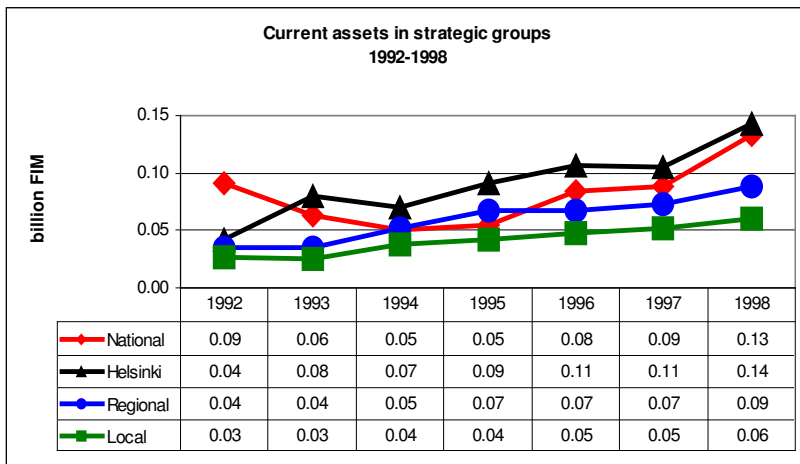
The figure shows that the Regional Group has the highest long term debt growth of 143.9%. In 1992, the debts were FIM 0.28 billion and in 1998 they were FIM 0.69 billion. Additionally, the National Group has a remarkable increase in long term debts and the yearly development fluctuations are great. In 1992, the long term debts were FIM 0.35 billion and at the end of research period they stood at FIM 0.62, billion, which means a

growth rate of 77.1 %. The Helsinki Group with its moderate growth of 0.4% sustained its long term debt level during the years observed. In round figures, the long term debts were 0.61 billion FIM in 1992 and 1998. The Local Group is the only strategic group to decrease its long term debts, by 34.4% to the level of FIM 0.23 billion in 1998 from the level of FIM 0.36 billion in 1992.

As the short term and long term debts are accumulated, the growth rate during the research period is 126% in the National Group, 17% in the Helsinki Group and 100% in the Regional Group. In the Local Group, the debt amount decreased by 18%. The structure of debts varies between the strategic groups and thereby affects the solvency and the net capital costs of the strategic groups.

In addition to debt variable results, the ASP-model includes current assets. The total current assets of the FTC were FIM 0.4 billion in 1998. Between 1992 and 1998, the growth rate was 114.4%. The size of current assets is, however, very marginal compared with the other financial resources. Also this variable result shows differences in resources between the strategic groups, as illustrated in Figure 5.13.

Figure 5.13 Current assets in the strategic groups



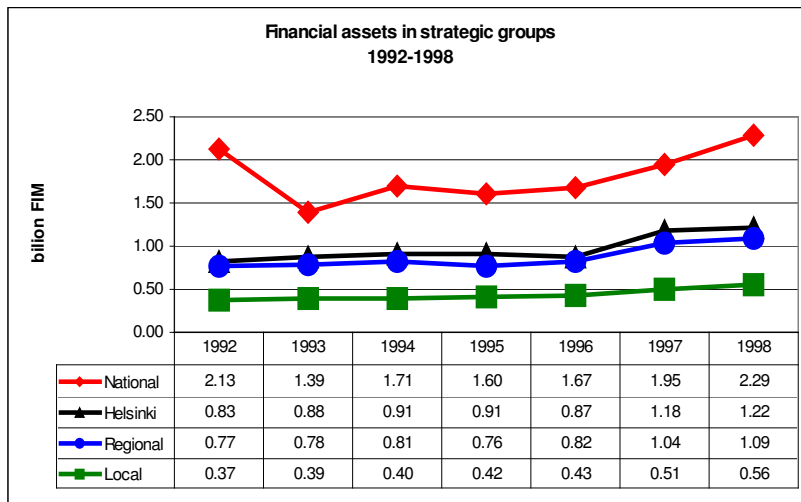
The figure shows that current assets increased rapidly in all of the strategic groups during 1992-1998. The growth in the Helsinki Group is as high as 235 %. In 1992 the current assets were FIM 0.04 billion and in 1998 they stood at FIM 0.14 billion. The comparable growth in

the Regional Group was 150% and by the end of the research period the current assets grew from FIM 0.004 billion to FIM 0.09 billion. In the Local Group, the current assets also grew fast, that is by 129%, from FIM 0.03 billion to FIM 0.06 billion. Among the strategic groups, the National Group has the lowest growth of 46.2% in these resources. In 1992, the current assets were FIM 0.09 billion in total and in 1998 they were FIM 0.13 billion.

In addition, the financial assets affect the performance of the telephone companies. In 1992 the financial assets in the FTC were FIM 4.1 billion. At the end of 1998, they were FIM 5.2 billion.<sup>395</sup> Thus, the growth rate is 26.1%. The growth rate in the strategic groups, excluding the National Group, is very similar to each other, as Figure 5.14 shows.

In the National Group, the financial assets grew from 2.1 billion FIM to FIM 2.3 billion in 1998, the growth being 7.5 %. The Helsinki Group increased its financial assets by 47.7% from FIM 0.8 billion to FIM 1.2 billion during the research period. The development of the financial assets in the Regional Group resembles the growth of the Helsinki Group. The total change was 42.0% from FIM 0.8 billion to FIM 1.1 billion in 1998. In the Local Group, the growth was 52.0%. These resources increased from FIM 0.4 billion in 1992 to FIM 0.6 billion in 1998.

Figure 5.14 Financial assets in the strategic groups



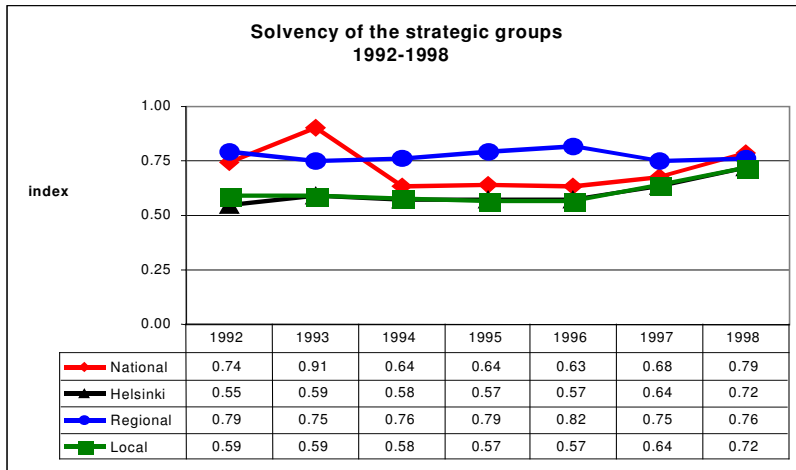
<sup>395</sup> The FG telephone companies received 1.2 MFIM from the sale of Radiolinja shares to Elisa. Talouselämä 43/1999.

In the present study the solvency defines the balance between the borrowed capital and the total balance sheet sum of the firm. This balance affects the net capital costs and therefore the economic performance of the telephone company. Generally, solvency developed positively in the FTC. During the seven-year research period the solvency increase was (18.6%), and in 1998, the solvency of all the strategic groups was nearly on the same level between 0.72 and 0.79. However, Figure 5.15 shows solvency development differences between strategic groups.

The Helsinki Group and the Local Group had the lowest solvency levels in 1992, but they also had the fastest solvency growth. In the Helsinki Group, the growth was 31.3%. The solvency level grew from 0.55 in 1992 to 0.72 seven years later. The comparable figures in the Local Group were from 0.59 to 0.72, representing an increase of 26.1%.

As the figures show, the Regional Group is the only strategic group that has a negative solvency development of 3.7%. The solvency was 0.79 in 1992 and 0.76 in 1998. The high solvency level must, however, be noted. In the National Group, the solvency level development resulted in a growth of 5.8%. In 1992, the solvency was 0.74 and it grew to 0.79 by 1998.

Figure 5.15 Solvency of the strategic groups

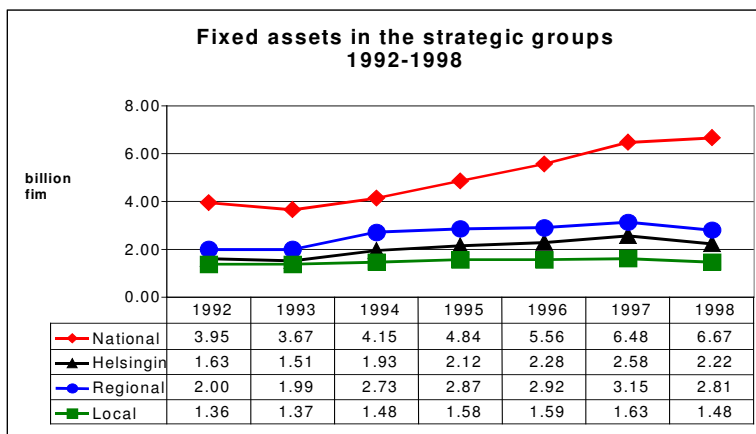


In summary, the development of the short and the long term debts, as well as current assets and financial assets, show that the FTC as a whole increased its financial resource position. In this respect, all the strategic groups became closer. However, the development between the financial resource categories in the strategic groups is very different. The National Group increased the debt amount, but also the current and financial assets. The Helsinki Group sustained its total debt level, but it also increased its current and financial assets. The Regional Group significantly increased its total debts. However, at the same time it increased its current and financial assets. Finally, the Local Group clearly reduced its debts and increased the financial and current assets.

### Physical resources

The physical resource variables in the advanced strategy-performance model consist of fixed assets, investments and depreciation. The fixed assets grew by 47.7% from FIM 9 billion in 1992 to FIM 13 billion in 1998 in the whole of the FTC. The development of these resources between the strategic groups in fixed assets is shown in Figure 5.16.

Figure 5.16 Fixed assets in the strategic groups



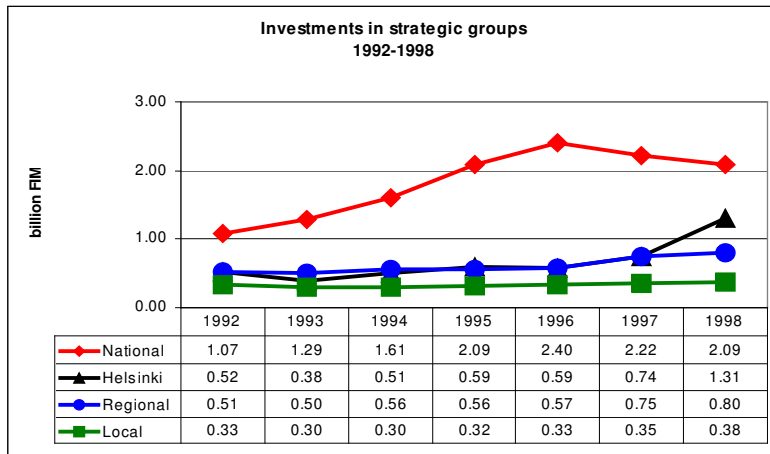
The growth of the fixed assets is clearly the fastest in the National Group during the research period. The amount of fixed assets grew from FIM 3.95 billion to FIM 6.67 billion. Thus, the growth rate was 68.9%. In the Helsinki Group and the Regional Group, the growth rate was 40% during 1992-1998. In the Helsinki Group, these resources grew from FIM 1.63 billion to FIM 2.23 billion. The comparable growth figures in the Regional Group

are FIM 2.00 billion and FIM 2.81 billion. The Local Group is an exception among strategic groups with its growth rate of only 8.6%. It has the smallest fixed assets, which were FIM 1.36 billion in 1992 and FIM 1.48 billion in 1998.

The results of investments are a matter of interest because in order to ensure the renewal of the fixed assets investments are needed, for example. The investment totality in the FTC was FIM 2.4 billion in 1992. During seven years, they grew by 87.7% to over FIM 4.5 billion. Figure 5.17 also shows that this variable differs between the strategic groups.

Among the strategic groups, the Helsinki Group has the fastest investment growth, as high as 152.5%, from FIM 0.52 billion to FIM 1.31 billion in 1998. During the same period, the National Group showed a growth of 94.7%, from FIM 1.07 billion to nearly FIM 2.09 billion. In the Regional Group, the comparable growth is 55.4%. In this strategic group the investment grew from 0.51 billion FIM to nearly 0.80 billion FIM. Compared to other strategic groups the Local Group shows only a moderate growth rate of 14%. It nearly reaches the level of FIM 0.38 billion in 1998. In 1992, the total investments were FIM 0.33 billion.

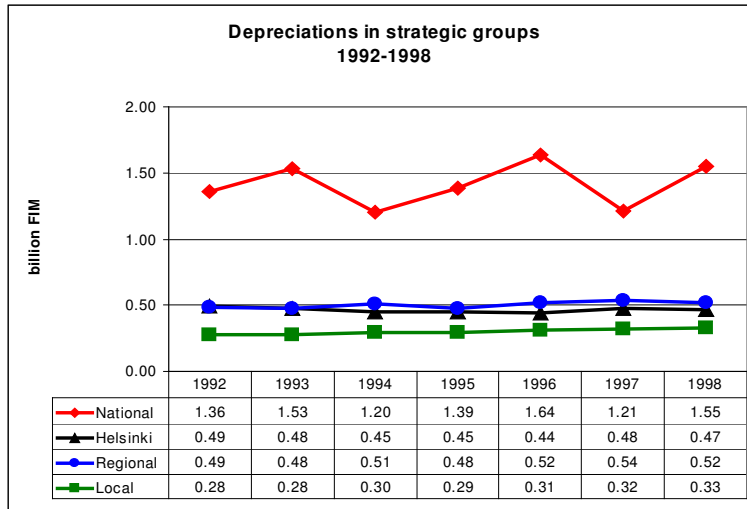
Figure 5.17. Investments in the strategic groups



In the ASP-model, depreciation is also one of the physical resource variables. The total FTC development was 9.6% during the research period. In 1992, the amount of depreciation was FIM 2.6 billion in total. Seven years later the respective sum was FIM 2.9 billion. As

Figure 5.18 shows, the results of this performance explaining variable also show the differences between the strategic groups. For example, the National Group depreciation results include great fluctuation during the research period. In the remaining strategic groups, the development is more even.

Figure 5.18 Depreciation in the strategic groups



The National Group increased its depreciation amount to FIM 1.55 billion in 1998 from the level of FIM 1.36 billion in 1992 a growth rate of 14.2%. The Local Group also has a high growth in terms of depreciation, totalling 17.9%. It increased from FIM 0.28 billion to FIM 0.33 billion during the seven years observed. In the Regional Group the growth rate is 6.0%. The depreciation sum grew from FIM 0.49 billion to FIM 0.52 billion in 1998. Unlike in the other strategic groups, the Helsinki Group decreased its depreciation by -4.3% from FIM 0.49 billion to FIM 0.47 billion in 1998.

In summary, the bigger the telephone companies that the strategic group includes, the more the fixed assets grew. The results of investments develop in a similar way. The National Group grew fastest and the Local Group was very moderate in this respect. The depreciation results, however, show a different development. The National Group and the Local Group have the highest growth rates. The Helsinki Group even decreased its depreciation.



### Technology resources

As noted earlier, the technology resource data is not available on the individual telephone company level. However, technology resources are included in the other resources, especially in fixed assets, investments and depreciation. The technology resources are therefore implicitly included in the ASP-model of the FTC.

### Summarising the resource element results

In 1992, the resource base as a whole is different between the strategic groups in the FTC. During seven research years, the combination of resources developed in different ways in these groups, due to the resource allocation decisions in the telephone companies. These decisions have further increased the total resource differences between strategic groups in 1998. The resource changes are summarised in Table 5.4.

Table 5.4 The changes in resources in the strategic groups

Changes in resources, %	National Group	Helsinki Group	Regional Group	Local Group
Employees	23.8	0.9	10.6	-16.2
Employees with institute education	36.4	71.1	32.8	26.8
Employees with academic education	62.1	67.7	45.7	24.4
Fixed assets	68.9	40.0	40.0	8.6
Investments	94.7	152.5	55.4	14.0
Depreciation	14.2	-4.3	6.0	17.9
Long term debts	77.1	0.4	143.9	-34.4
Short term debts	141.6	63.3	63.3	0.3
Financial assets	7.5	47.7	42.0	52.0
Current assets	46.2	235.0	150.0	129.0
Solvency	5.8	31.3	-3.7	26.1

The table shows resource allocation differences between the strategic groups, among which the National Group and the Helsinki Group increased their resources the most. The National Group followed a strategy that increased the debts and its own resources as a whole. In the Helsinki Group, the increase in human, physical and financial resources are on a high level. Conversely, in the Local Group, human and physical resource developments are clearly under the level of the other three strategic groups, except for the financial resources, which show a great increase and strong debt decrease. The Regional Group recorded a great

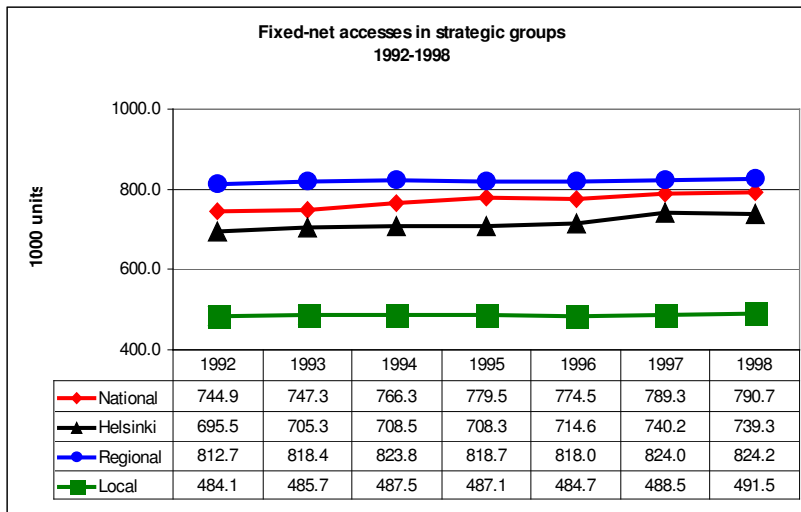
increase in debts, while other resource development figures are near the average figures of the FTC.<sup>396</sup>

### 5.2.3. The development in the logistics element

In the ASP-model, logistics is one of the two elements that exploit the existing potential. The variables included in the model are the total number of fixed-net accesses, fixed-net company accesses, the payments to the other telephone companies and the number of selling outlets. In addition, the personnel costs and the net capital costs are included in the model because they indicate the preparedness to exploit the potential.

The number of the fixed-net accesses in the FTC grew from 2.7 million units in 1992 to 2.8 million units in 1998. The growth rate was 4.0%. Parallel to the variable results examined earlier, differences in the logistics variables between the strategic groups also exist. This is shown in Figure 5.19 in terms of fixed-net accesses.

Figure 5.19 Fixed-net accesses in the strategic groups

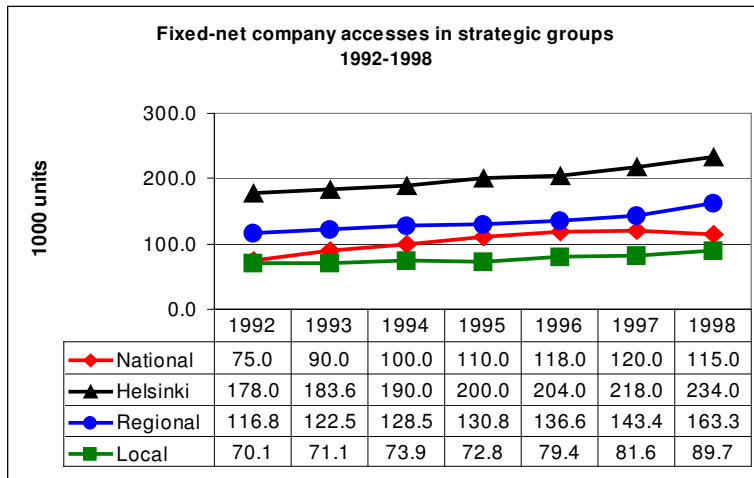


<sup>396</sup> During the interviews with Artte and Lehmus it became evident that a major part of the high financial resource increase of many FG members is due to the selling of Radiolinja shares.

The National Group increased the number of the fixed-net accesses by 6.1%, from 0.74 million units to 0.79 million units in 1998. The Helsinki Group had a similar growth of 6.3%, from 0.70 to 0.74 million units. The development of these accesses in the Regional Group and the Local Group are remarkably lower during the research period. The increase in the Regional Group was from 0.81 million in 1992 to 0.82 million accesses in 1998, representing a growth of 1.4%. The increase in the Local Group is 1.5%, from 0.48 to 0.49 million units.

The fixed-net company accesses show a total increase of 36.8% in the FTC. During seven years, the amount of these accesses grew from 0.44 to 0.6 million units. Also this variable shows result differences between the strategic groups, as can be seen in Figure 5.20.

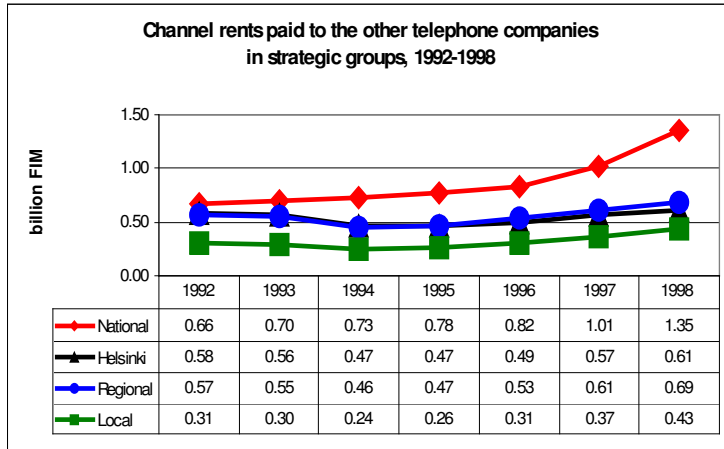
Figure 5.20 Fixed-net company accesses in the strategic groups



The fixed-net company accesses in the National Group grew by 53.3%. In 1992, the number of these accesses was 75,000 and in 1998 115,000. The growth rates in the remaining strategic groups were on the level of 30%. In 1992, the Helsinki Group had 178,000 fixed-net company accesses and seven years later the figure stood at 234,000, the growth rate being 31.5%. In the Regional Group the respective growth is 31.2%. The number of the accesses grew from 116,800 to 153,200. Between 1992 and 1998, the Local Group increased the fixed-net company accesses by 28.0%, from 70.100 to 89.700.

The payments to the other telephone companies show the renting of the logistics chains from the other telephone companies. During the research period, the growth of these payments was 44.7% altogether in the FTC. The channel rents grew from FIM 2.1 billion in 1992 to nearly FIM 3.1 billion in 1998. As Figure 5.21 shows, the development differences between the strategic groups are significant after 1994.

Figure 5.21 Channel rents paid to other telephone companies



As to the channel rents in the individual strategic groups the National Group clearly shows the fastest growth of all. The increase is as high as 103.9%. The absolute figures grew from 0.66 billion FIM in 1992 to 1.35 billion FIM in 1998.

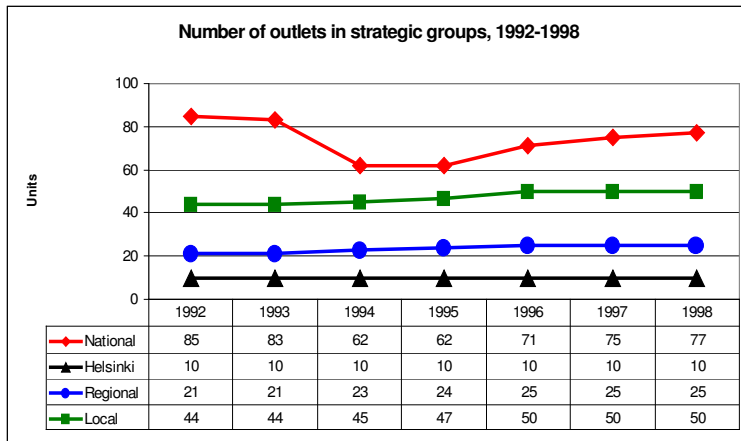
The channel rents of the Local Group grew by 39.9%. The rents increased from FIM 0.31 billion in 1992 to FIM 0.43 billion in 1998. Respectively in the Regional Group, the payments were FIM 0.57 billion in 1992 and FIM 0.69 billion in 1998, representing a growth rate of 19.3%. Compared to other strategic groups, the Helsinki Group clearly has a lower increase in these fields. The growth rate is 4.5% and the absolute figures grew from FIM 0.58 billion in 1992 to FIM 0.61 billion in 1998.

The number of the full scale telecommunication delivery outlets is also included in the research model as a logistics variable.<sup>397</sup> The change of these outlets is very small during

<sup>397</sup> The outlet number of the affiliated companies is not available for 1992-1998. In 2000 the National Group had 72 Telering, 63 Päämies and 15 Veikon Kone outlets. The Helsinki Group had altogether 140 outlets: Mäkitorppa, Setele and Kama. Telia had 108 outlets altogether, named Viestituote and Tietopuhelin.

1992-1998 in the FTC. The changes in strategic groups are minor, as Figure 5.22 shows. The National Group has a negative growth rate of 9.4% in the number of the outlets. The total outlet number decreased from 85 to 77. However, as the figure shows, after 1994, annual increases are visible. The Regional Group has an outlet number growth of 19%, from 21 to 25 outlets. The Local Group increased its outlets from 44 to 50, that is by 13.6%. The Helsinki Group sustained its 10 outlets during the whole research period.

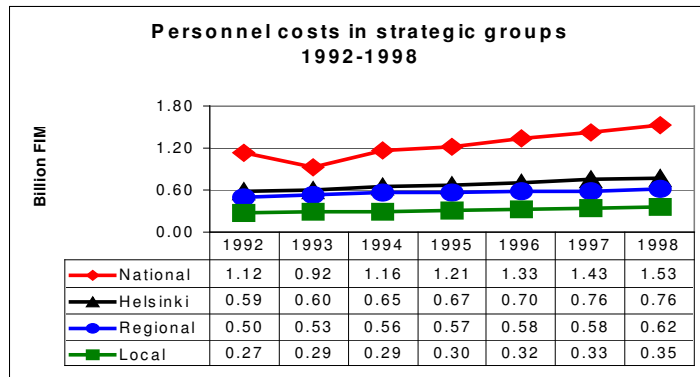
Figure 5.22 Number of outlets in the strategic groups



As noted in the theoretical part of this study, logistics must work to increase the preparedness of the personnel for all marketing activities. Thus, the personnel costs, which also include personnel development costs, are included in the logistic variables. Personnel costs grew by 31.3% in the FTC. After the first two years observed, they grew every year. Figure 5.23 shows the development of these costs in the strategic groups.

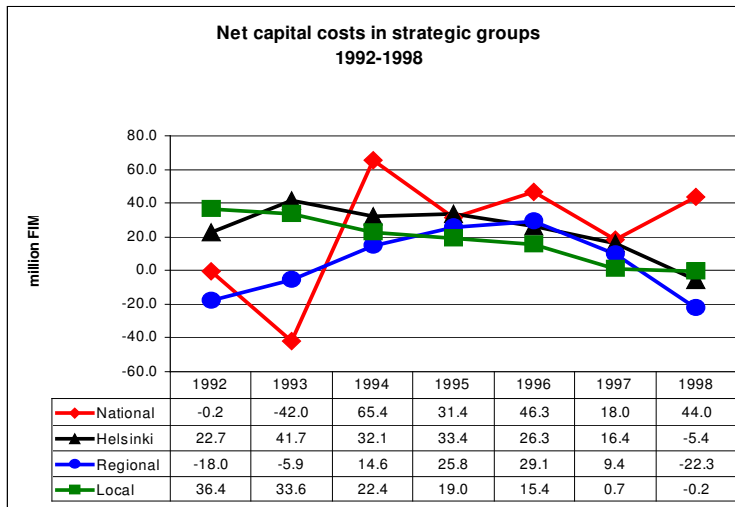
In the National Group the personnel cost development is the fastest at 35.8%. The costs grew from FIM 1.12 billion in 1992 to FIM 1.53 billion in 1998. During the same period, the Helsinki Group increased these costs by 30.3%, from FIM 0.59 billion to FIM 0.76 billion. In the remaining two strategic groups the growth is under 30%. In the Local Group, it is 29.0%, which means an increase from FIM 0.27 billion in 1992 to FIM 0.35 billion in 1998. In the Regional Group the growth was at its lowest at 23.5%, from FIM 0.50 billion to FIM 0.62 billion.

Figure 5.23. Personnel costs in the strategic groups



In the ASP-model, net capital costs are interpreted as an alternative use for the other resources especially for the preparedness to exploit the existing potential. Generally, during 1992-1998, in the FTC, the net capital costs decreased, which means growing earnings through capital. The cost decrease was 60.6%. In 1992, the total net capital costs were FIM 41 million in and FIM 16 million in 1998. Figure 5.24 shows remarkable differences between the strategic groups in terms of development in net capital costs.

Figure 5.24 Net capital costs in the strategic groups



The net capital cost increased remarkably in the National Group. In 1992, this strategic group earned FIM 0.2 million by its capital. The great change in cost levels took place in

1994. Finally, these costs resulted to FIM 44 million in 1998. The growth rate is over 221%. The cost development in all the other strategic groups differs completely. In the Helsinki Group, the net capital costs were FIM 23 million in 1992. Seven years later, this strategic group earned over FIM 5 million by its net capital surplus. This means a decrease of 124%.

The Regional Group had a net capital cost surplus of FIM 18 million in 1992. The surplus continued to increase up to FIM 22 million in 1998, the increase being 23%. The Local Group decreased its net capital costs every year. In 1992, the costs were FIM 36 million and in 1998 the Local Group had a surplus of FIM 0.2 million. The total decrease was 100.6%.

#### Summarising the logistics element results

There are obvious differences in logistics development between the strategic groups. This is shown in Table 5.5, where the changes in the logistics variables are presented. The results show that particularly the National Group and the Helsinki Group emphasised logistics in their resource allocation more than the Regional Group and the Local Group with smaller sized telephone companies. This is true especially in terms of fixed-net access and personnel cost development. Generally, all the FG members increased their resources by decreasing the net capital costs during the research period.

Table 5.5 The changes in logistics variables in the strategic groups

Changes in logistics variable values, %	National Group	Helsinki Group	Regional Group	Local Group
Fixed-net accesses	6.1	6.3	1.4	1.5
Fixed-net company accesses	53.3	31.5	31.2	28.0
Channel rents	103.9	4.5	19.3	39.9
Number of outlets	-9.4	0	19.0	13.6
Personnel costs	35.8	30.3	29.0	23.5
Net capital costs	221.0	-124.0	-23.0	-100.6

#### 5.2.4. Marketing development

Marketing is the second potential exploiting element in the ASP-model next to logistics. The results of the service, price and advertising variables are presented next, starting with the main services offered by the telephone companies.

## Services

The services in the model include the number of mobile calls, the mobile call minutes, the data transmission turnover, the fixed-net rent turnover, and the local-net turnover. The presentation begins with the number of the mobile calls. Because of the previous monopoly market, relevant and covering data on the FTC mobile call market before 1994 is not available. The National Group refused to give data, and in the Helsinki Group, Regional Group and Local Group these services were not offered. The focus of the result presentation mostly covers the years between 1994 and 1998 when the growth in mobile calls was as high as 164% in the FTC. These calls grew from 0.3 billion units in 1994 to 1.5 billion units in 1998. As Figure 5.25 illustrates, there are clear result differences between the strategic groups.

In the National Group, the number of mobile calls is 270 million in 1994 and 1147 million calls four years later, resulting in a growth of 324.3%. In the Helsinki Group the respective figures are 14 million in 1992 and 130 million in 1998, which results in a growth of 927%. The growth rate in the Regional Group is also very fast. The mobile calls increased from 8 million to 156 million units. Because of the low starting level, the growth rate is over 1800%. For the same reason the growth in the Local Group is over 25000%. In this strategic group, the mobile calls grew from 0.4 million in 1994 to 91 million mobile calls in 1998.

Figure 5.25 Number of mobile calls in the strategic groups

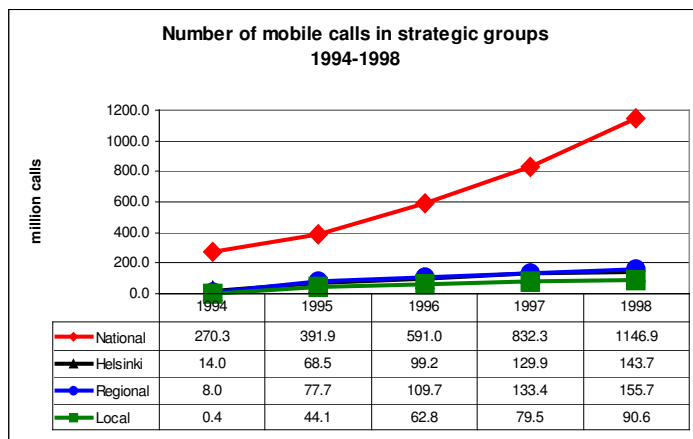
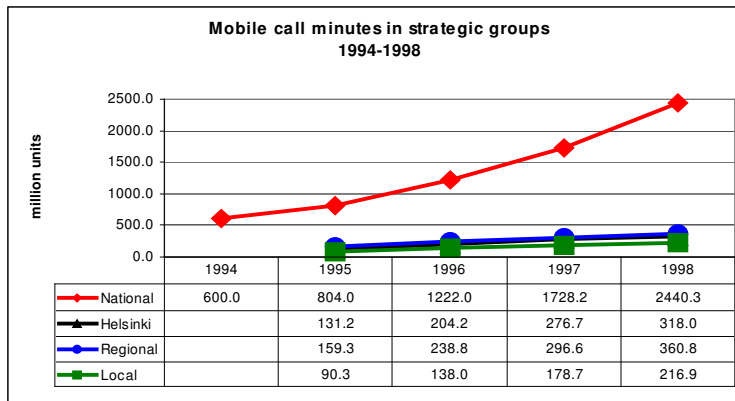




Figure 5.26 shows that the development of mobile call minutes follows a similar path compared with the mobile call number. In total, the growth of the mobile call minutes is over 181% between 1994 and 1998 in the FTC. In 1998 the amount was 3336 million minutes. The mobile call minutes are not available for the purposes of this study before 1995, except for the figures from the National Group in 1994. Despite the short observation period differences are to be seen between the strategic groups.

Figure 5.26 Number of mobile call minutes in the strategic groups

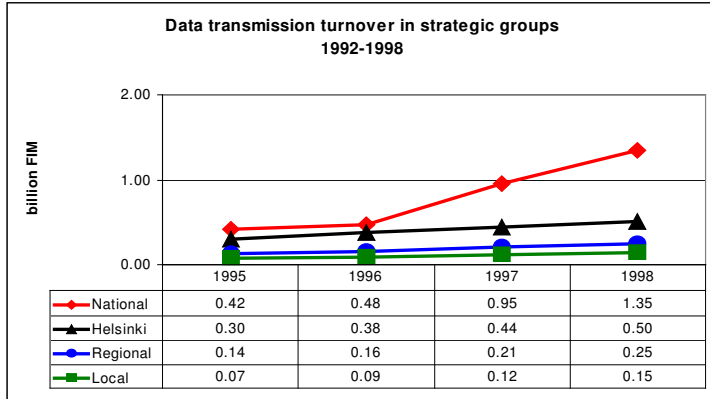


The National Group developed much faster than the other strategic groups in terms of mobile call minutes. In 1994, the number of mobile call minutes in the National Group was 0.6 billion minutes. This figure grew up to 2.4 billion minutes in 1998, the growth rate being 203.5%. The figures in the Helsinki Group show that the mobile call minutes stood at 0.1 billion in 1995 and 0.3 billion in 1998, resulting in an increase of 142.4%. The Regional Group increased its mobile call minutes by 126.5% from 0.2 billion to 0.4 billion. In the Local Group, the comparable development was rather similar with a growth rate of 140.2%. In this group, the mobile call minutes grew from 0.1 billion in 1995 to 0.2 billion minutes in 1998.

Data transmission turnover is one of the service variables and the growth of the data transmission services in the FTC is very fast. However, the available data limits the strategic group specific observations to the years 1995-1998. Between those years, the data

transmission total turnover grew over 143%.<sup>398</sup> Figure 5.27 shows that there are differences between the strategic groups even during a shorter time period.

Figure 5.27 Data transmission turnover in the strategic groups



In the National Group, the data transmission turnover grew by 221% during the observed years. It increased from FIM 0.42 billion in 1995 to FIM 1.35 billion in 1998. The development in the other strategic groups is slower. In the Helsinki Group, the data transmission turnover grew from FIM 0.30 billion in 1995 to FIM 0.50 billion in 1998. Thus, the growth rate is 67.9%. The Regional Group has somewhat higher growth of 79.4%. The turnover grew from FIM 0.14 to 0.25 billion FIM. The data transmission turnover growth in the Local Group is 104%. It grew from FIM 0.07 billion to FIM 0.15 billion.

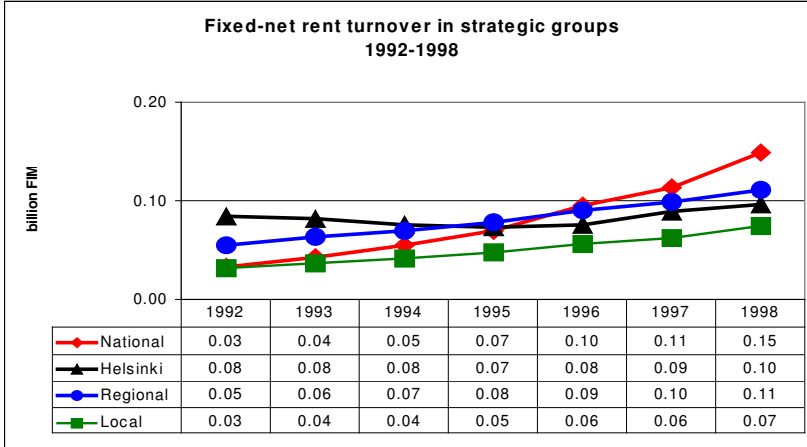
One telephone company revenue source is the fixed-net rents. During the research period, the FTC rent revenues grew from FIM 0.2 billion to FIM 0.4 billion with a growth rate of 110.6%. The differences between the strategic groups are shown in Figure 5.28.

In the National Group the growth of fixed-net rent is clearly the fastest at 346%. The figures increased from FIM 0.33 billion in 1992 to FIM 0.15 billion in 1998. During the same period, the Helsinki Group increased these revenues from FIM 0.08 billion to FIM 0.10 billion, the growth rate being on the level of 15%. In the Regional Group the increase is 102.3%, from FIM 0.05 billion in 1992 to FIM 0.10 billion in 1998. In the Local Group, the respective

<sup>398</sup> Finnet Group members data for 1992-1994 is not available.

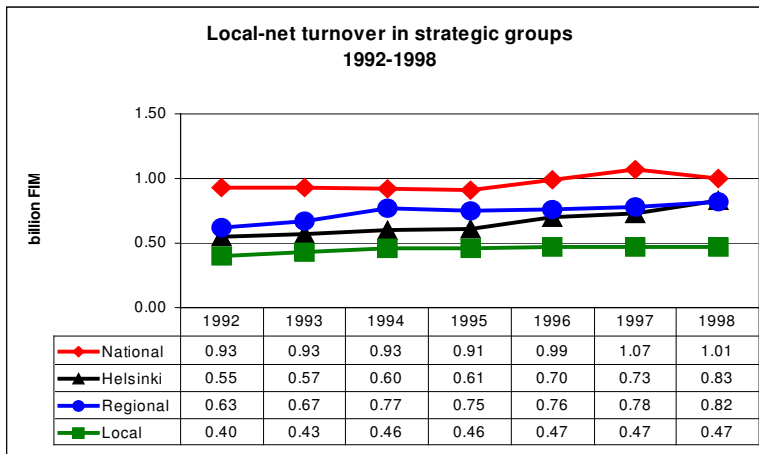
increase is 129.1%. In this strategic group the fixed-net revenues grew from FIM 0.03 billion to FIM 0.07 billion.

Figure 5.28 Fixed-net rent turnover in the strategic groups



The local calls are a very important service area for the telephone companies. Because of the missing data, the best substitute for the local calls is the local-net turnover.<sup>399</sup> The local-net turnover in the FTC grew totally from FIM 2.5 billion in 1992 to FIM 3.1 billion in 1998, which means a turnover increase of 25%. Figure 5.29 shows clear differences between the strategic groups in the development of the local-net turnover.

Figure 5.29 Local-net turnover in the strategic groups



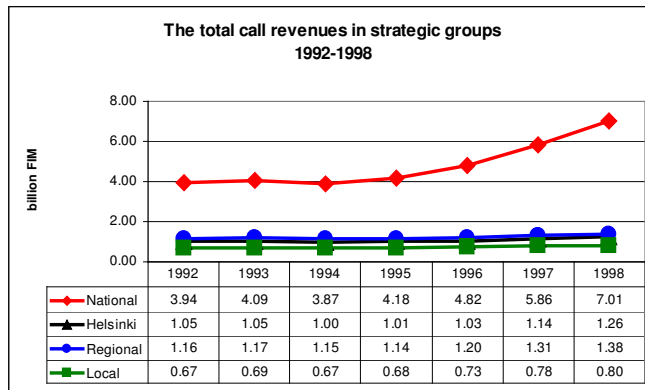
<sup>399</sup> Interview, Artte.

In the National Group the local-net turnover increase reaches the level of 8.5%. This means a growth from FIM 0.9 billion in 1992 to FIM 1.0 billion in 1998. The Regional Group has a growth of 31.0%. In absolute figures the local-net turnover increased from FIM 0.6 billion to nearly FIM 0.8 billion during the research period. The Local Group increased its local-net turnover respectively from FIM 0.4 billion to nearly FIM 0.47 billion, which means a growth of 17.5%. In the Helsinki Group the local-net turnover grew from FIM 0.5 billion in 1992 to FIM 0.8 billion in 1998, representing a growth rate of 51.5%.

Finally, total call revenues (TC) show how efficiently the telephone companies have been exploiting the total phone call market potential. The accumulated TC-revenues in the FTC, grew from FIM 6.8 billion to FIM 10.5 billion during the seven years. The growth rate is 53.4%. Figure 5.30 shows differences between strategic groups in terms of this variable.

In the National Group, the TC-revenue increase is 78% during the research period. The revenues grew from FIM 3.9 billion to FIM 7.0 billion. In other strategic groups the growth rates are more moderate. TC-revenues grew in the Helsinki Group from FIM 1.1 billion to FIM 1.3 billion, the total growth rate being 26.0%. The Regional Group reached nearly the same growth rate with 19.3%. In absolute figures the TC-revenues grew from FIM 1.2 billion to nearly FIM 1.4 billion in this strategic group. The development of the TC-revenues is the slowest in the Local Group. Their TC-revenues increased by 18.9% from FIM 0.7 billion in 1992 to FIM 0.8 billion in 1998.

Figure 5.30 The total call revenues in the strategic groups

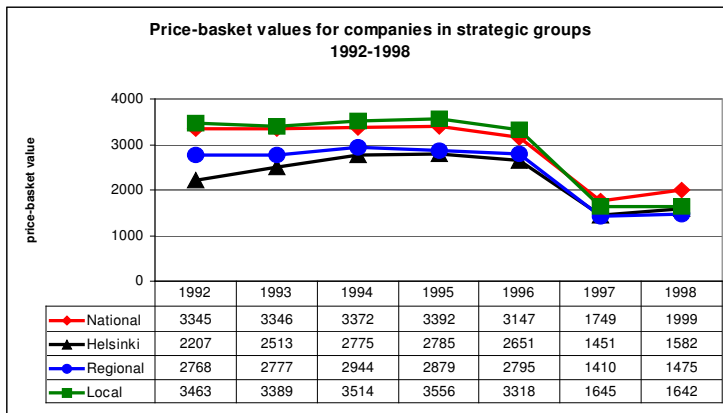


In summary, the monopoly period has its effects on the starting level of the main different service areas. This fact has to be considered in interpreting such variables as the regulated service growth figures. Actually, the strategic groups may be categorised into groups according to the strategic decision configurations concerning the main service areas. First, in the National Group, the increase of the TC-revenues, the mobile calls, data transmission and fixed-net rents are emphasised significantly more than in the rest of the strategic groups. Second, despite the high growth rates in the mobile calls and in the data transmission turnover, the remaining strategic groups strongly emphasised the local-net turnover in their developments.

### Price levels

The price-baskets for companies and households, as price level indicators, are important economic performance explanatory variables in the ASP-model. The price-basket results in strategic groups are presented next, beginning with the company price-basket results. Figure 5.31 shows that the mean of the price-basket for companies in the FTC decreased by 1.1% from the value of 3235 in 1992 to 3198 in 1996.<sup>400</sup> The decrease is mainly a consequence of the renewal of the calculation formula. During 1997-1998, the comparable FTC mean grew by 1.2% from the value of 1597 to 1616. The figure also shows that there are clear differences between the strategic groups as to the price-basket development.

Figure 5.31 Price-basket values for companies in the strategic groups



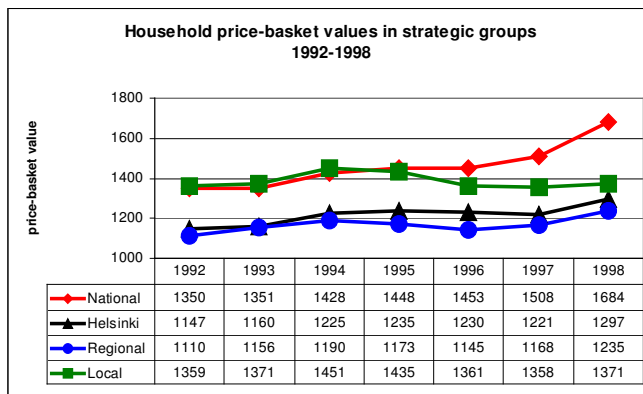
<sup>400</sup> The Ministry of Transport and Communications Finland renewed the calculation formula in 1997. This change, however, has not had any serious effects on the present research, because the change had similar effects on every strategic group.

In the National Group, the price-basket value for companies decreased by 5.9%, from 3345 to 3147 during 1992-1996. However, during 1997 and 1998, the price level growth was 14.3%, from 1749 to 1999. Respectively, the Helsinki Group increased the price level for companies every year, except in 1996, however, it still had the lowest price-level in 1997. During 1992-1996, the price-basket value grew from 2207 to 2651, a growth of 20.1%. In comparison, during 1997-1998 the growth was 9.0% from 1451 to 1582.

In the Regional Group, the price-basket level was increased moderately during the whole research period. From 1992 to 1996, the value grew from 2768 to 2795, an increase of 1.0%. In the last two research years, the price-basket value grew by 4.6% from 1410 to 1475. The Regional Group therefore remained on the lowest price level among the strategic groups in 1998. The Local Group has a decreasing company price-level development during the seven years observed. In 1992, it has the highest price level of 3385 and in 1996 the price level was 3318, a decrease of 2.0%. Furthermore, during the latest two years, the decrease was 0.1% from 1645 to 1643.

The results of the second price variable, namely the price-basket for households, show that the FTC mean value increased by 11.5%, from 1245 to 1388. Figure 5.32 shows that three of the strategic groups increased their household prices, but by different growth rates.

Figure 5.32 Price-basket values for households in the strategic groups



The National Group clearly has the fastest price-basket growth among the strategic groups during the research period. The household price level grew by 24.7% from 1350

to 1684. The comparable development in the Helsinki Group is 13.1%, from 1147 to 1221. In the Regional Group, the household price level increased from the value of 1110 to 1235, which means an increase of 14.7%.

Figure 5.32 further illustrates that the development of household price-basket value is slow in the Local Group, at only 2.3%. In 1992, the value of the price basket of this strategic group, that is 1359, is the highest among the strategic groups. Seven years later, the price-basket level for households is 1371, the Local Group maintaining second position in the price level ranking.

In summary, the National Group followed a price strategy of fast increase, and it has the highest company and household price-levels. The rest of the strategic groups were closer to each other in the price levels. This is because the Helsinki Group and the Regional Group increased their price levels, while the Local Group sustained its price levels. It can be seen that the bigger the companies in the strategic group, the greater the growth in the price levels.

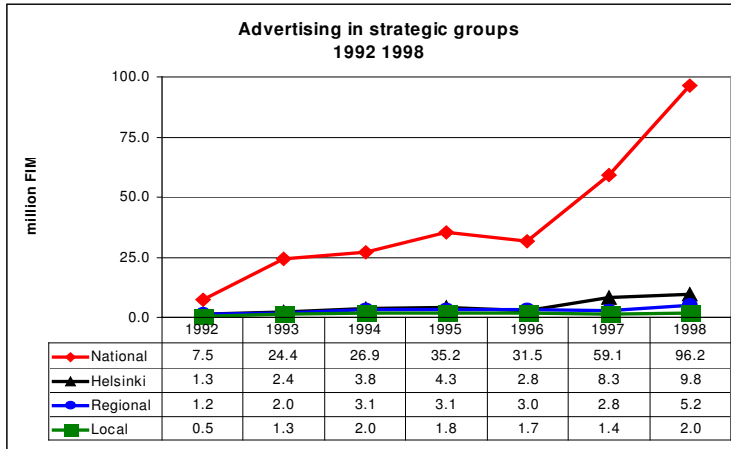
### Advertising

The last explanatory variable in the ASP-model is advertising costs. In 1992, the advertising costs had hardly any performance explanatory role in most of the strategic groups. However, the advertising of the mobile call services in 1994-1998 heralded a new dawn in the National Group and the Helsinki Group. In total, the advertising costs in the strategic groups grew from FIM 10.4 million in 1992 to FIM 113.2 million in 1998, an increase as high as 984.5%. Figure 5.33 shows the advertising cost differences between the strategic groups.

The National Group's advertising costs are FIM 7.5 million in 1992. That is 72% of the total advertising expenditures in the FTC. Seven years later, the costs are FIM 96.2 million, which is nearly 85% of the total advertising in the FTC and which represents a growth of over 1200%. During the same period, the advertising costs in the Helsinki Group grew from FIM 1.3 million to FIM 9.8 million, the growth rate being 672.8%. In the Regional Group, the total advertising costs were FIM 1.2 million in 1992. In 1998 they were FIM 5.2 million. This means a growth of 342.5%. In the Local Group, the advertising expenditures were FIM

0.5 million in 1992 and on a moderate level of FIM 2.0 million in 1998. The growth in this strategic group is 282.5%. In summary, it can be argued that the bigger the companies in the strategic group, the faster the advertising costs growth are.

Figure 5.33. Advertising costs in the strategic groups



To get a comprehensive picture of the advertising costs in the FTC, it must also be noted that the joint advertising of the FG had effects on all the FG members. It is, however, impossible to point direct effects of these FG advertising costs on the performance of the telephone companies or on the performance of the single strategic groups. These kinds of advertising costs grew from FIM 0.8 million to FIM 74.3 million, the growth rate being over 9000%.<sup>401</sup> This huge increase clearly shows that advertising was not used at the beginning of the research period.

#### Summarising the marketing element results

The marketing results show remarkable differences between the strategic groups, although the mobile call and data transmission services are emphasised in each strategic group. The growth figures in Table 5.6 show that the size of the telephone company reflects the marketing strategy followed.

<sup>401</sup> The effects of FG advertising cannot be seen in the performance of individual telephone companies.



Table 5.6 The changes in marketing in the strategic groups

Changes in marketing variable values, %	National Group	Helsinki Group	Regional Group	Local Group
Number of mobile calls (1)	324.3	927.0	1800.0	25000.0
Number of mobile call minutes (1)	203.5	142.4	126.5	140.2
Total call revenues	77.9	26.0	19.3	18.9
Data transmission turnover (1)	221.0	67.9	79.4	104.0
Fixed-net rent turnover	346.0	15.0	102.3	129.1
Local-net turnover	8.5	51.5	31.0	17.5
Price level for companies 1992-1996	-5.9	20.1	1.0	-2.0
Price level for companies 1997-1998	14.3	9.0	4.6	0.1
Price level for households	24.7	13.1	14.7	2.3
Advertising	1200.0	672.8	342.5	282.5
(1 The development is calculated from the years 1995-1998.				

Most of the results show that the development of the individual variables is much faster in those strategic groups that include big telephone companies. There are also clear differences between the National Group and the rest of the three strategic groups, which consists of the FG telephone companies.

In the ASP-model, the strategy implementation process elements follow the explanatory variables presented above. The results of these elements are the next focus of this study.

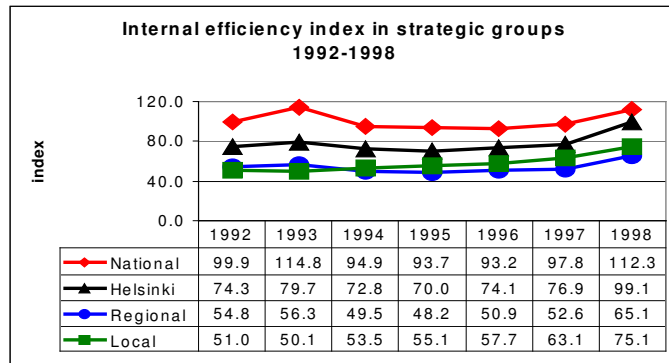
### 5.2.5 Internal process results

The internal and external process results of the telephone company show how efficiently the strategy is implemented. In the ASP-model, these process results precede the final economic performance of the firm. The presentation begins by the internal process variable results, which are internal efficiency and the variable profile in the personnel research. Then, the external strategy process results are discussed.

### Internal efficiency index

The internal efficiency index (IE-index) shows how efficiently the telephone company has created turnover by personnel and fixed assets.<sup>402</sup> The total IE-index in the FTC during 1992-1998 grew from 53.3 to 74.5, an increase of nearly 40%. However, the development of the IE-index values show differences between the strategic groups, as Figure 5.34 illustrates.

Figure 5.34 Internal efficiency index in the strategic groups



At the beginning of the research period, the value of the IE-index in the National Group was 99.9. During seven years, it grew to 112.3, the growth being 12.4%. In 1992, the Helsinki Group had an IE-index of 74.3. With an increase of 33.4%, it grew to 99.1. Thus in 1998, the Helsinki Group sustained its ranked IE-index position in 1998. In the Regional Group, members followed strategies that together resulted in a positive change of 18.8% in the IE - index. The index value of 54.8 in 1992 grew to 65.1 in 1998. This is clearly the lowest growth among the strategic groups. In the Local Group, the index developed by the fastest rate, by 47.3%. The index grew from 51.0 to 75.1 during the research period. Thus, the IE-index development results show remarkable differences between the strategic groups as can be seen in Table 5.7.

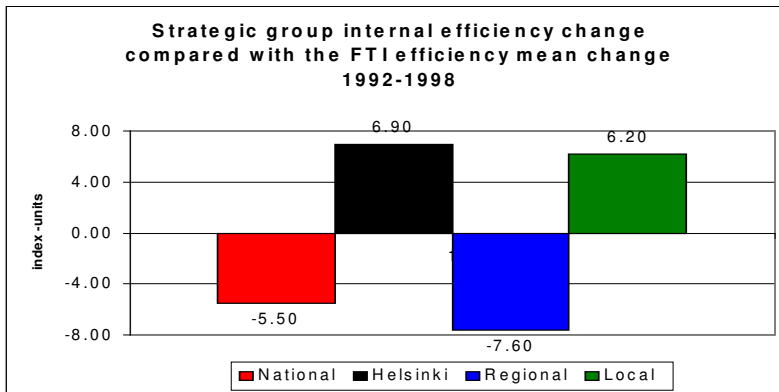
<sup>402</sup> The IE-index interpretation may vary in many ways. Turnover may increase or decrease. Personnel cost and investments can also increase or decrease. Thus, the IE-index changes may have several interpretations. For example, an increase in turnover, other elements being unchanged, will lead to an increase in the efficiency index. The same will occur if personnel costs and investments decrease, with turnover unchanged.

Table 5.7 Changes in the internal process results in the strategic groups

Changes in the internal process results, %	National Group	Helsinki Group	Regional Group	Local Group
IE -index	12,4	33,4	18,8	47,3

It can be further noticed that during 1992-1998, the IE-index mean grew by 17.9 units in the FTC. Figure 5.35 shows clear differences in this respect between the individual strategic groups compared with the IE-index total mean growth in the FTC. Two of the strategic groups are below and two of them exceed the FTC growth mean.

Figure 5.35 The internal efficiency index changes of the strategic groups



The National Group was not able to reach the IE-index mean growth of the FTC. The difference is -5.5 index-units. Parallel to this, the Regional Group results show -7.6 index-units. On the other hand, the Helsinki Group has a positive IE growth of 6.9 index-units. The Local Group's result is also positive (6.2 index-units). In summary, the strategic groups moved closer to each other during the research period in terms of the IE-index. In 1992, the IE-index values are the highest in the strategic groups, with the biggest sized members. Among the strategic groups only the Regional Group lost its position.

### Internal personnel research

The internal personnel research variables are included in the ASP-model in order to explain how the management has succeeded to implement the chosen strategy according to the personnel. Unfortunately, only one strategic group participated in this area of research. The small number of respondents is also quite small, at 18%. Thus, the results must be interpreted only as supportive data to learn more of the strategy-performance connections in general. The results, however, open important viewpoints to the role of the strategy process as the competitive advantage is created.

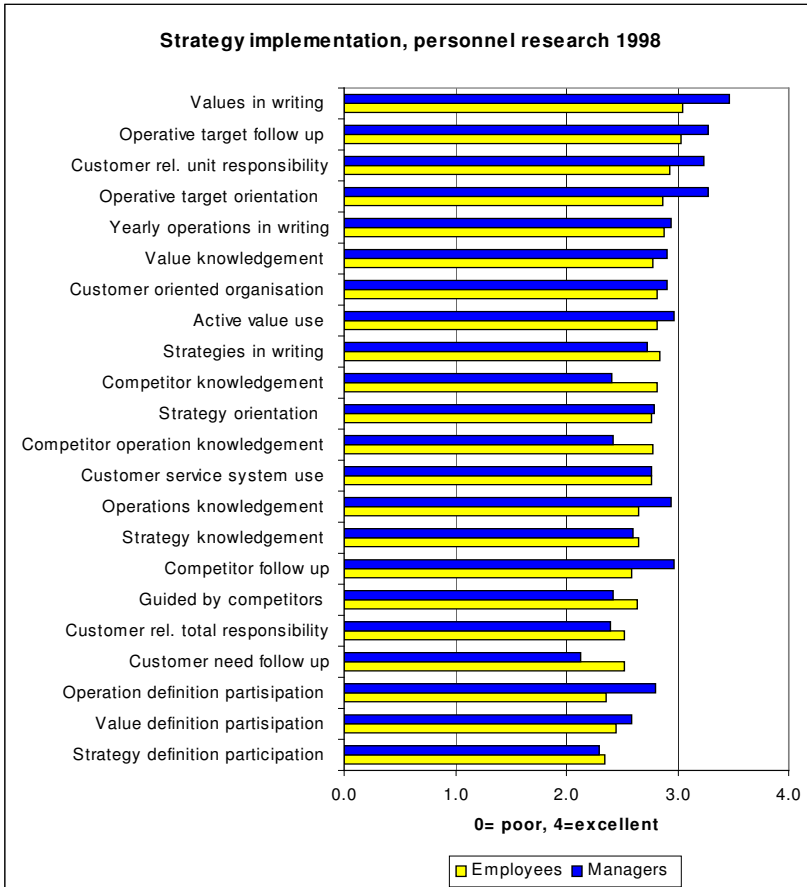
The presentation of the internal personnel research focuses on the strategy implementation, the telephone company image, and the service quality level results through a holistic approach without going into depth. The totalities are the most important items of interest for the present study. The discussion begins with the strategy implementation profile, which is illustrated in Figure 5.36.

The figure shows that the values of the strategy implementation variables among the personnel are on a fairly high level. However, any superiority is not to be found among the individual variables measured. It is also visible that the managers give probably somewhat higher values to some of the variables in comparison to employees. The total mean of the answers among the managers is 2.78 (0=poor, 4= excellent). The respective mean among the personnel is 2.72.

According to the total strategy implementation profile, the focus has been more on the performing of the operative activity patterns, namely potential realising efficiency, than on variables closest to the strategy definition issues, which creates effectiveness. This can be seen in the high ranking position right after the 'values in writing' variable. The operation oriented variables in the profile are 'operative target follow up', 'customer relationship responsibility', 'operative target orientation' and 'yearly operations in writing'. The strategy variables are on the low profile level: 'strategies in writing', 'strategy orientation', 'strategy knowledge', 'value definition participation' and 'strategy definition participation'.

Figure 5.36 The strategy implementation according to the personnel of Ringring<sup>403</sup>

N=639



It can also be seen that in the strategy implementation profile, 'general level customer oriented' variables, namely 'customer unit responsibility' and 'customer oriented organisation', are positioned on a high level. However, 'customer need follow up' and 'customer relationship total responsibility' get a lower position in the personnel research, which gives a more realistic picture of the customer orientation in the developed competitive environment. Thus, it is shown that the customer needs are not at the top of the strategy implementation processes. The role of the competitors is also more emphasised than the role of the customers.

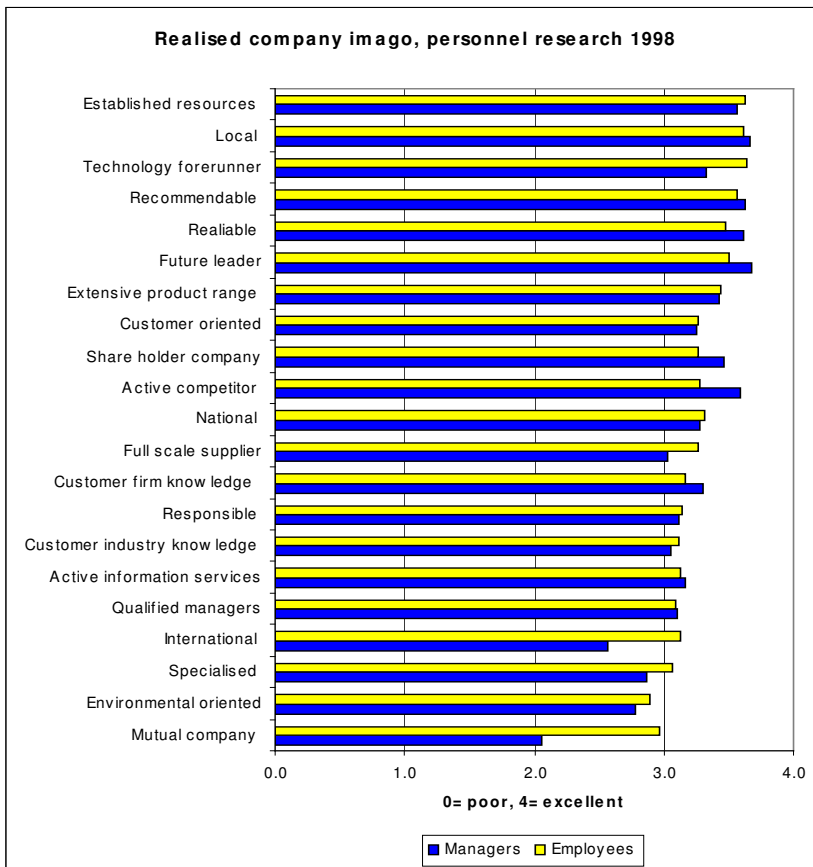
<sup>403</sup> Ringring is pseudonym. See detailed results in appendix 6.

Compared with the strategy process implementation results the realised company image is good according to the personnel, as Figure 5.37 shows.

The majority of the telephone company image variables reach the value 3.0. The total mean is 3.23. It is also worth of noticing that the mean among managers is probably slightly lower (3.21) than the mean among the personnel (3.28). As the figure shows, the respondents in the personnel research have emphasised the variables such as 'established resources', 'local', 'technology forerunner', 'recommendable', 'reliable', 'future leader' and 'extensive product range' as the most identifying company image features. They are followed by variables clearly connected to customers on the market, such as 'customer oriented', 'customer firm knowledge' and 'customer industry knowledge' variables.

Figure 5.37 The telephone company image according to the personnel

N=639



The respondents were also asked to evaluate the realised service quality of the telephone company. The total mean of the service quality is 7.8 (on the scale 4-10), which is not an excellent level. Figure 5.38, however, shows the total profile service according to the shares of the excellent grades (9-10) among all the answers. These grades are excellent in showing the possible differences between employees and managers.

Figure 5.38 The company service quality level according to the personnel

N=639

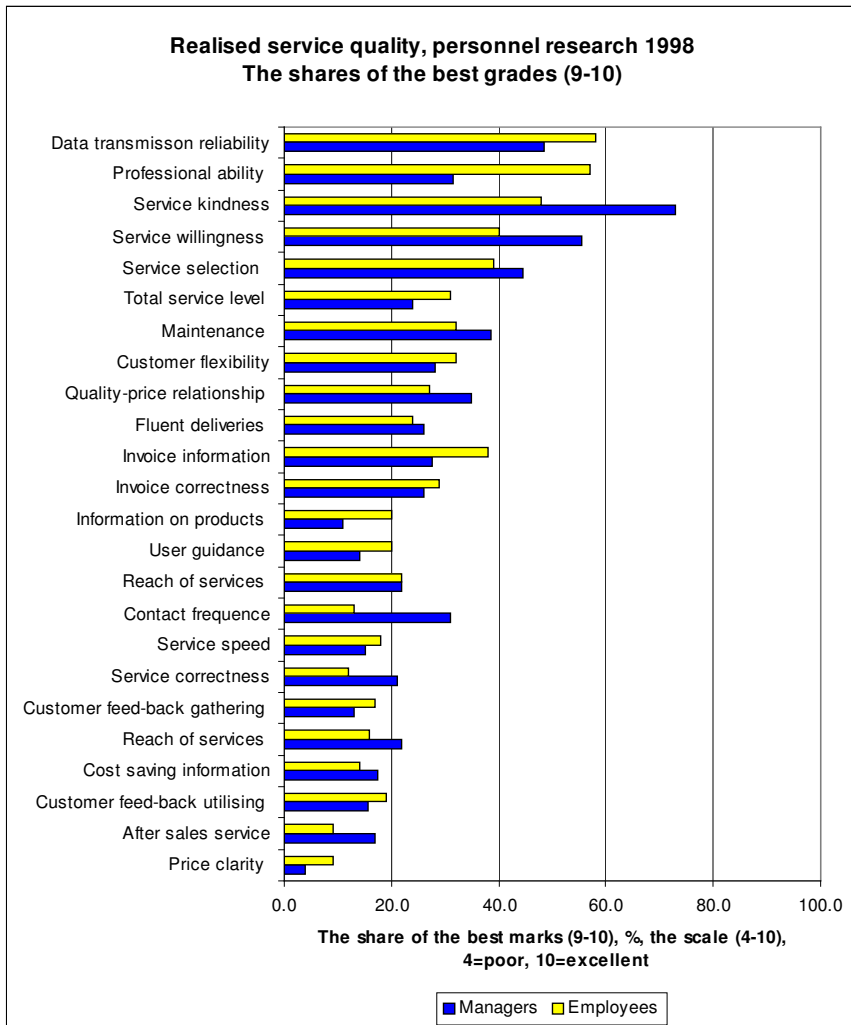


Figure 5.38 gives the impression that according to the respondents, the realised service quality is not on the best possible level. There are quite a few variable values among the best grades, which exceed the level of 40%. Over half of the best variables are under the level 20%. In most of the variables the differences between the opinions of the managers and personnel are evident. According to managers, only the value of the variable 'service kindness' is over 70%, and the value of 'service willingness' exceeds the level of 50%. The answers of the employees, on their part, show that that 'data transmission', 'service kindness' and 'professional ability' are over the level of 50%. The profile shows that the orientation towards the customer scope market in services is not very central. The majority of the customer oriented variables have a minor role in the profile. Thus, according to the respondents, the results show that the market orientation has not reached the best possible level.

#### Summarising the internal process results

The internal efficiency element in the FTC has two components: the IE-index and the results of the internal personnel research. First, the IE-index shows remarkable differences between the strategic groups. If the Regional Group is excluded, it follows that the smaller the members in the strategic group, the higher the IE-index level development is. Because of the very different developments in the IE-index during the research period, all the strategic groups moved closer to each other. The National Group and Regional Group lost some of their positions to the Helsinki Group and the Local Group, which clearly increased their IE-index.

The second component, the internal personnel research, was carried out in only one of the strategic groups. Thus, the profile results presented show the success of the managerial strategy implementation task only in this particular strategic group. The results as such are not comparable or applicable as explanatory data in other strategic groups. However, it creates the need for further studies in the FTC, especially because of the differences between management and personnel profiles. Altogether, the results have a remarkable role as far as the strategic group theory is developed. This will be discussed in the last part of this study.



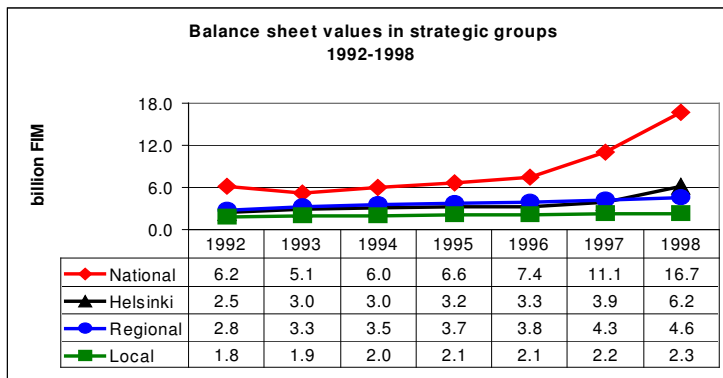
### 5.2.6. External process results

The process result presentation continues with the external process results. They include market power and the variables of the market research, which focuses on the realised company image and service quality level in the strategic groups.

#### Market power

In the ASP-model market power is defined through the balance sheet of the telephone company - the surrogate of the total resources available. During the research period, the accumulated balance sheet of the telephone companies in the FTC grew by 125.4% from FIM 13.2 billion to FIM 29.8 billion. Figure 5.39 shows differences between the strategic groups in the balance sheet values, although all of them increased their resources. It appears that the bigger the telephone company members that the strategic group includes, the faster the development of the market power.<sup>404</sup>

Figure 5.39 The market power of the strategic groups



In the National Group, the balance sheet value grew from FIM 6.2 billion in 1992 to FIM 16.7 billion in 1998.<sup>405</sup> The growth is very fast especially in the last three years of the research. The comparable growth in the Helsinki Group is from FIM 2.5 billion to FIM 6.2 billion. This total development is especially due to the latest years of fast development,

<sup>404</sup> National Group issued shares in 1998.

<sup>405</sup> The balance sheet for 1992 and 1993 has been compiled by the controllers of Sonera.

when the balance sheet figures of Radiolinja are included in the numbers of the Helsinki Group and because of the share issue in 1997. In the Regional Group, the balance sheet grew from FIM 2.8 billion in 1992 to FIM 4.6 billion in 1998. In comparison, the growth in the Local Group balance sheet developed from FIM 1.8 billion in 1992 to FIM 23 billion in 1998. The development differences of the market power is summarised in Table 5.8.

Table 5.8. Changes in the external process results in the strategic groups

Changes in the external process results, %	National Group	Helsinki Group	Regional Group	Local Group
Market power	171,5	149,2	62,7	30,8

The changes in the market power shares in the following figure 5.40 further visualises the overall development.

Figure 5.40 The change of the market power share of the strategic groups

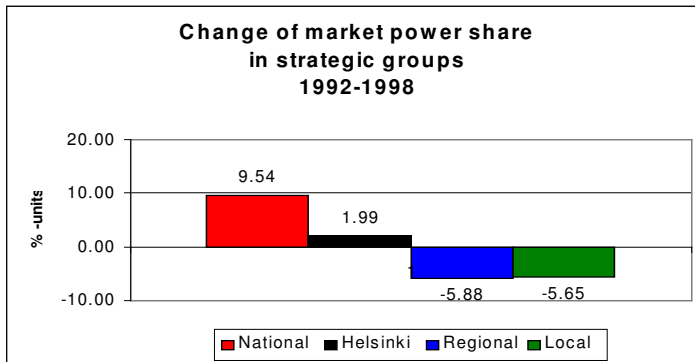
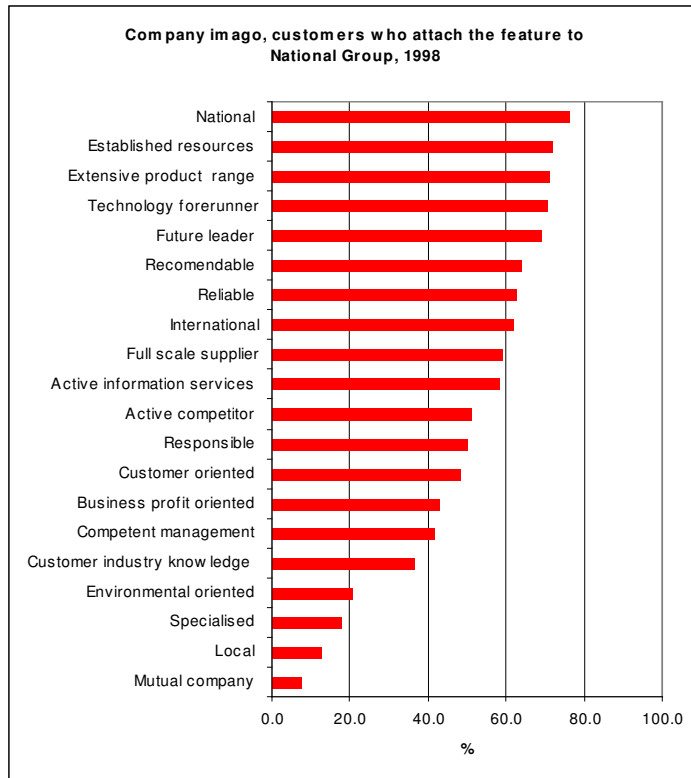


Figure 5.40 shows that the National Group increased its market power share remarkably more than the rest of the strategic groups during 1992-1998, by 9.5% -units from 46.5% to 56.1%. The Helsinki Group has a growth of nearly 2% -units from the share of 18.9% to 20.9%. The rest of the strategic groups have a negative share growth. The change in the Regional Group is -5.9% -units, from the share of 21.5% to 15.3%. The Local Group has a decrease of 5.7% -units, from 13.5% to 7.8%.

### Market research results<sup>406</sup>

External process results also include market research results, which further increase the understanding of the strategy-performance connections of the telephone companies. Parallel to the holistic approach of this study, the total profile is the most important result. The presentation includes the realised company image and service quality results in each of the strategic groups. The presentation begins with the National Group in Figure 5.41.<sup>407</sup>

Figure 5.41 The National Group's realised company image, N= 855



The results show that the National Group, according to the respondents of the market research, followed a strategy that emphasises the geographical operation scope ('national' 76%, 'international' 61.9%), the large resource size ('established resources' 72.0%, 'future leader' 69.1%) and the product and technology basis ('extensive product range' 71.2%,

<sup>406</sup> The more detailed results of the market research are in appendix 5.

<sup>407</sup> The proportion of the respondents, who attach the attribute to the telephone company, is in brackets.

'technology forerunner' 70.8%, 'full scale supplier' 59.2%). In the image profile such variables as 'recommendable' (63.7%), 'reliable' (62.7%), 'active information services' (58.3%), 'active competitor' (51.2%) and 'responsible' (50.1%) are emphasised. The profile as a whole shows significant differences compared with the customer image expectations presented earlier with regard to scope results. This fact will be discussed later in the conclusions of the empirical part of this study.

The external process results include the realised service quality level in the National Group. According to the customers, the total service quality mean is 7.9.<sup>408</sup> However, only the shares of the best grades (9-10) are included in the service profile presentation. The main results are in Figure 5.42.

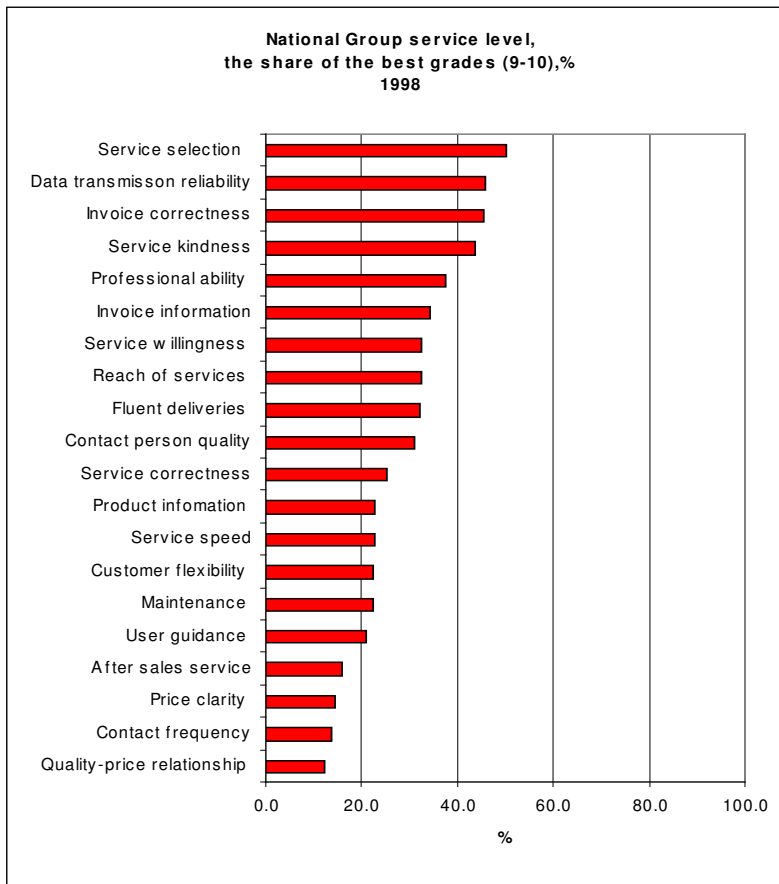
Figure 5.42 shows that the realised service quality level is not very high compared with the scope market expectations presented earlier in this study. Most of the realised service quality best grades of 9-10 are under the level of 40%. According to the respondents of the market research, the National Group has emphasised service technical quality aspects.<sup>409</sup> This emphasis can be seen in the total profile and in the single variable, such as 'service selection' (50.0%), 'data transmission reliability' (45.7%), 'correctness of invoices' (45.6%). 'Service kindness' is the only functional variable, which exceeds the level of 40%.

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<sup>408</sup> The scale is (4-10), where 4 is very poor and 10 is excellent.

<sup>409</sup> E.g. Grönroos 1983 and 1994, categorises service quality into technical and functional quality categories.

Figure 5.42 The National Group's service quality level, N= 855 <sup>410</sup>



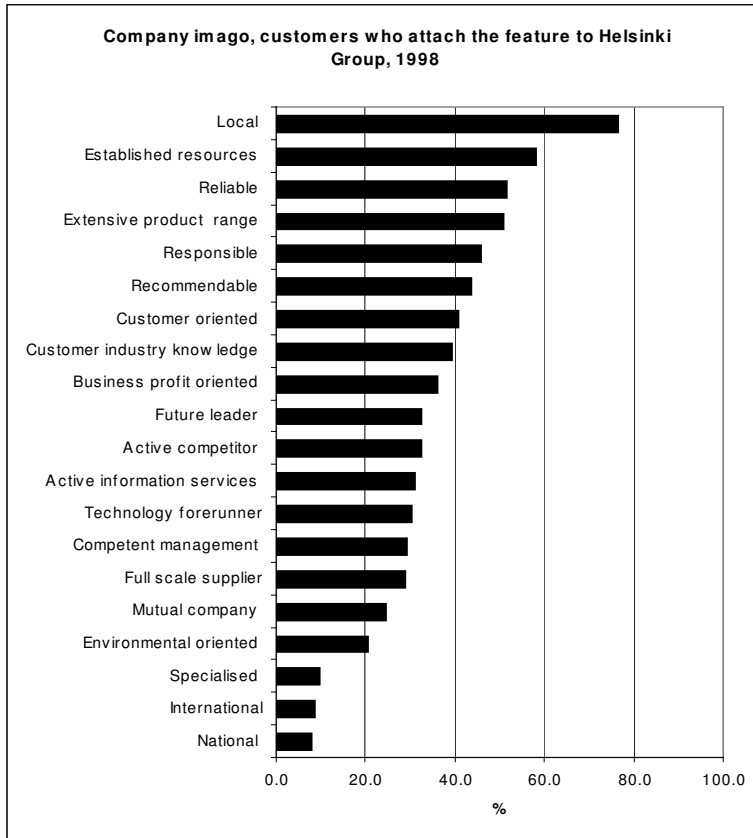
The results of the Helsinki Group will be presented next. The company image and service level of this strategic group are examined in the same way as in the National Group. The main results are collected in Figure 5.43.

Figure 5.43 shows that according to the market research respondents the strategy followed in the Helsinki Group produces a company image where the emphasis focuses on the geographical scope ('local' 76.0%), resource basis ('established resources' 57.9%), and products ('extensive product range' 50.7%). Also the variable 'reliable' (51.4%) exceeds the

<sup>410</sup> The expected service level is constructed through correlation analysis, where the value of the service variable is compared with the total service grade mean of the strategic group. The realised service level is calculated as a share of all respondents, who attach the specified service feature to the telephone company. In the present study the total strategic group profile is more important than the individual specific variable values.

level of 50%. The results show that the Helsinki Group has not sufficiently satisfied the features that are most expected in the market. Only the variables 'responsible' (45.6%), 'recommendable' (43.3%) and 'customer oriented' (40.6%) exceed the value level of 40%.

Figure 5.43 The Helsinki Group's realised company image, N= 650

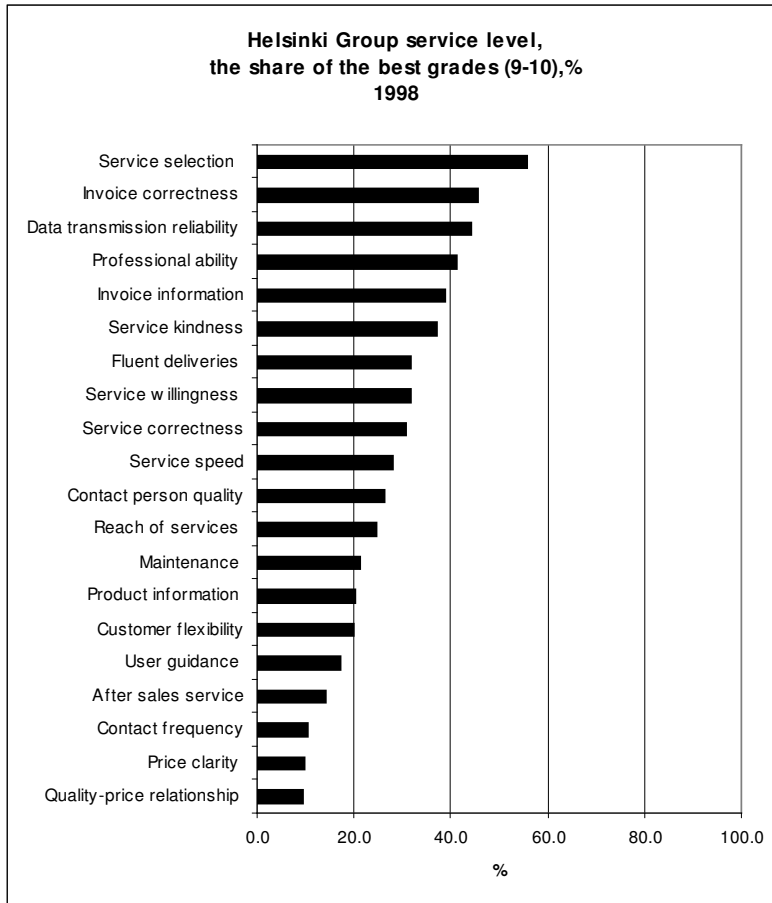


The Helsinki Group has followed a service quality strategy, which does not take customer expectations into consideration especially well. According to the market research, the total service quality mean is 7.9. Figure 5.44 shows that the technical service features play a primary role among the service features.

Figure 5.44 shows that the realised service quality level as a whole is not on an excellent level at all. Only four of the variable values exceed the level of 40%. According to respondents, the Helsinki Group has emphasised technical service quality aspects in the image. At the top the service results are 'service selection' (55.9%), 'correctness of invoices'

(45.6%), 'data transmission reliability' (44.1%) and 'professional ability' (41.3%). The rest of the variable values are under the level of 40%.

Figure 5.44 The Helsinki Group's service quality level, N=650

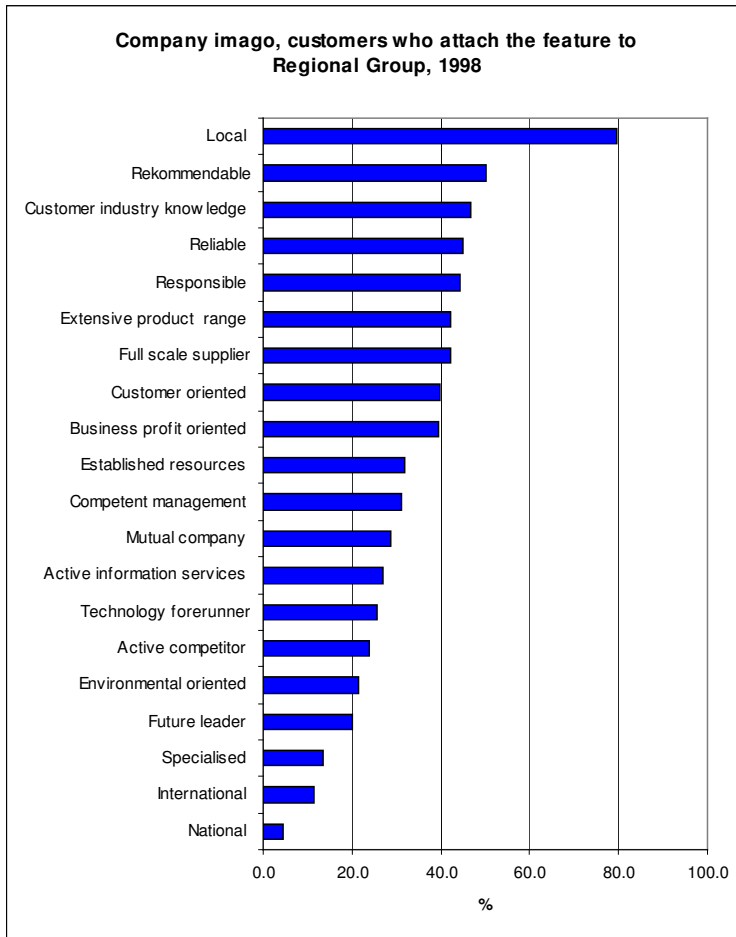


While the Helsinki Group most often emphasised technical service quality, the expectations of the scope market are most often functional service quality variables. Thus, the Helsinki Group has performed service operations, which are not very efficient with regard to expectations of the scope market.

Compared with the image and service quality market research results of the National Group and the Helsinki Group, the Regional Group has similarities, but also clear differences. The

results of the market research from the Regional Group are presented next, starting with the company image results shown in Figure 5.45.

Figure 5.45 The Regional Group's realised company image, N= 491



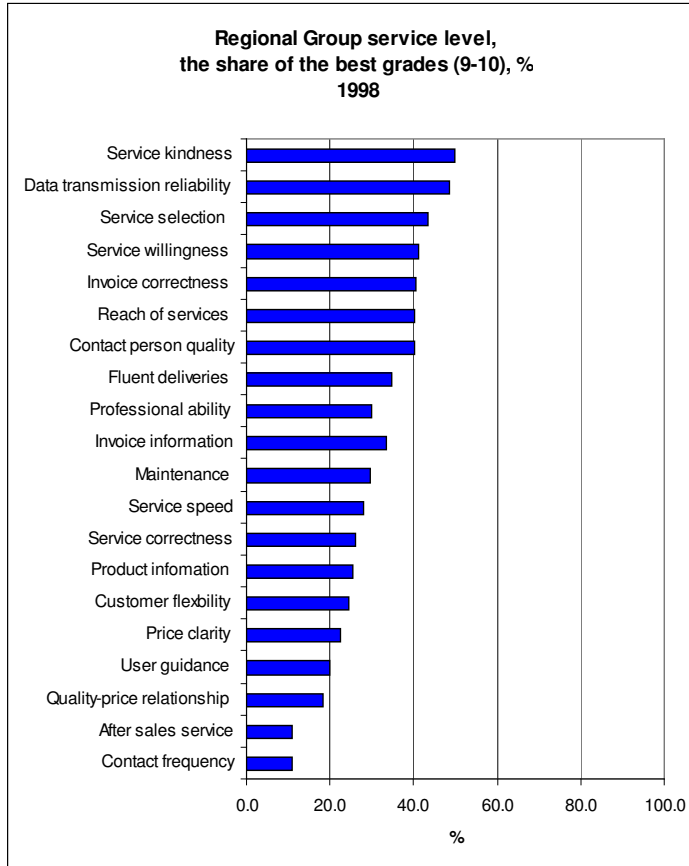
As a totality, customer respondents attach only a few typical variables to the Regional Group profile. The results show that the Regional Group followed strategies that yield a strong image of the geographical scope ('local' 79.8%) and the potentiality of recommendation ('recommendable' 50.0%). Any other company image features do not distinguish it from the other strategic groups. The following variables, which exceed the lower level of 40% are attached to customer orientation ('customer industry knowledge' 46.6%, 'reliable' 45.1%, 'responsible' 44.3%) and to the products ('extensive product range' 42.0%, 'full scale supplier' 41.0%, 'customer oriented' 40.0%, 'business profit oriented' 39.0%).



42.2%, 'full scale supplier' 42.2%). When these results are compared with the scope market expectations presented earlier, there appears to be clear differences.

With regard to the Regional Group service quality level, the total service quality mean is 7.7. The best service variable values of the Regional Group are illustrated in Figure 5.46.

Figure 5.46 The Regional Group's service quality level, N=491

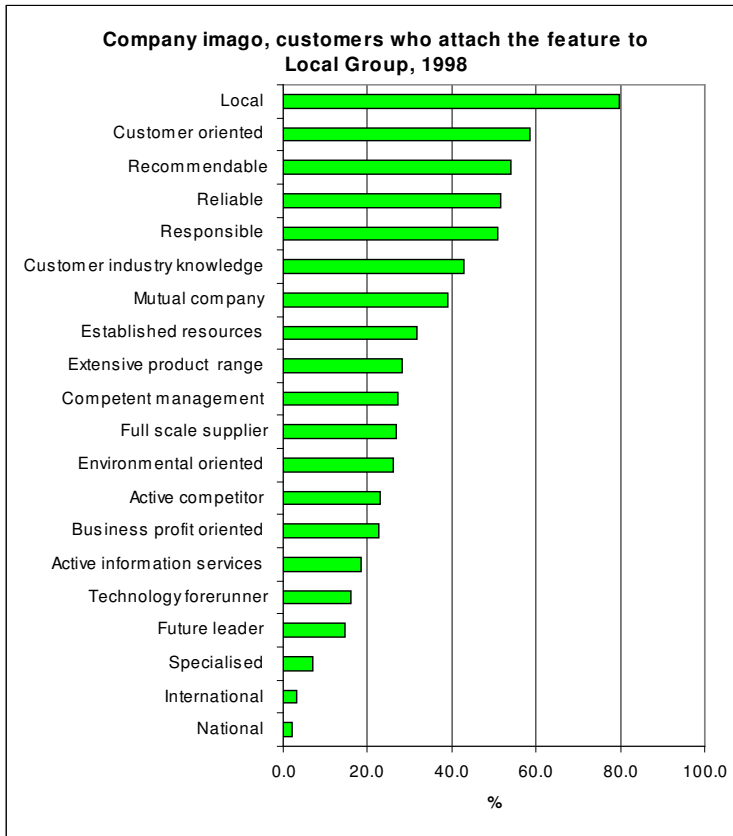


The Regional Group has performed such activity patterns, which as a totality yield rather low grades in the realised service quality level. Seven variables exceed the level of 40%. They include both functional ('service kindness' 49.9%, 'service willingness' 41.3%, 'contact persons personality' 40.2%) and technical ('data transmission reliability' 48.7%, 'service selection' 43.5%, 'invoice correctness' 40.5%, 'reach of services' 40.2%) services.

Thus, the service profile as a whole shows that the Regional Group has not sufficiently emphasised the service features expected by the scope market.

The realised image and service quality level of the Local Group is examined in a similar way to the other strategic groups in the FTC. The main image results are in Figure 5.47.

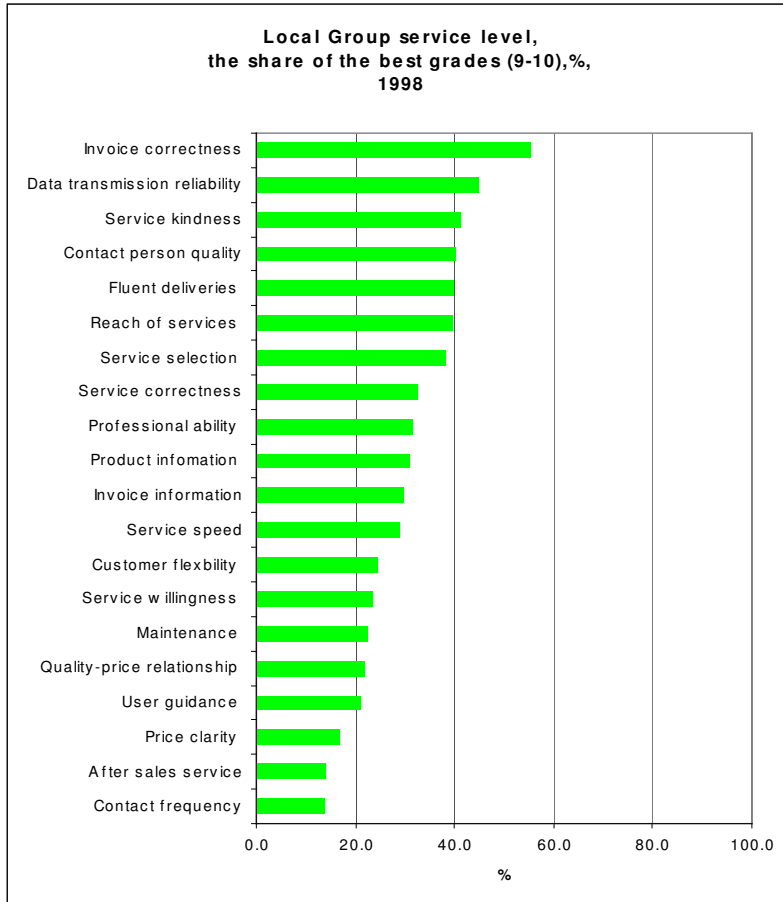
Figure 5.47 The Local Group's realised company image, N=431



According to the market research results, the geographical scope is the most identifying image feature ('local' 79.8%) of the Local Group. Unlike in the other strategic groups, the Local Group has emphasised the image customer orientation features ('customer oriented' 58.4%, 'recommendable' 54.1%, 'reliable' 51.6%, 'responsible' 50.7%, 'customer industry knowledge' 43.0%). The rest of the variables in the imago profile are under the level of 40%. These figures show that the Local Group followed a strategy, in which the image does not fully fulfil the scope market image expectations.

The service quality profile of the Local Group differs from the service quality expectations in a similar way as the service quality results in the three other strategic groups. The Local Group service quality mean is 7.9. The main service quality results are shown in Figure 5.48.

Figure 5.48. The Local Group's service quality level, N=431



There are only four variables that exceed the level of 40% as far as the service quality features are observed. The members of the Local Group have emphasised two technical ('invoice correctness' 55.5%, 'data transmission reliability' 44.9%) and two functional ('service kindness' 41.2%, 'contact person quality' 40.2%) service quality aspects. However, the great majority of the variables are under this value.

### Summarising the external process results

The external process results have two components. They are the market power and the results of the market research, the respondents of which are the scope market companies. The variable market power has highly significant differences between the strategic groups in the FTC. The results show that the bigger the companies that the strategic group includes, the faster the growth rate of the market power. In this respect, the National Group has developed its exploitation potential particularly fast among all the strategic groups.

The company image and service quality level act as important performance explaining elements in the market research showing relevant differences between the strategic groups. These results are collected in the two Tables 5.9 and 5.10.

Table 5.9 The strategic group's image profiles

Realised Company Image (The amount of respondents, who attach the specific image feature to strategic group members)							
National Group		Helsinki Group		Regional Group		Local Group	
Attribute	%	Attribute	%	Attribute	%	Attribute	%
National	76.0	Local	76.0	Local	79.7	Local	79.8
Established resources	72.0	Established resources	57.9	Recommendable	50.1	Customer oriented	58.4
Extensive product range	71.1	Reliable	51.4	Remainder of the attributes are under 50%		Reliable	51.6
Technology fore-runner	70.8	Extensive product range	50.7			Responsible	50.7
Future leader	69.1	Remainder of the attributes are under 50%				Remainder of the attributes are under 50%	
Recommendable	63.7						
Reliable	62.7						
International	61.9						
Full scale supplier	59.2						
Active information services	58.3						
Active competitor	51.2						
Responsible	50.1						
Remainder of the attributes are under 50 %							

The table above shows that the National Group is labelled as the only strategic group with national scope among the strategic groups. All the remaining strategic groups with smaller

sized telephone companies have a strong local image label. In the National Group's image, the large resource size, technology, and products are emphasised. The Helsinki Group is similar to the National Group. However, in the case of the National Group, the respondent mentioned more image features that exceed the value level of 50%, than in the case of other strategic groups. In this respect, the Regional Group has the smallest amount of the remarkable image features. The Local group is identified with locality and customer orientation. In their image strategies, all the strategic groups emphasised different features than the scope market expected, at least to some extent.

In general, the service quality in the strategic groups is not on a very good level, according to the scope market respondents. Table 5.10 shows that the service quality varies between 7.7 and 7.9 among the strategic groups.

Table 5.10 The strategic groups' service quality profiles

Realised service level (The share of best grades, 9-10, %)							
National Group		Helsinki Group		Regional Group		Local Group	
Total mean 7,9		Total mean 7.9		Total mean 7.7		Total mean 7.9	
Attribute	%	Attribute	%	Attribute	%	Attribute	%
Service selection	50.0	Service selection	55.9	Service kindness	49.9	Invoice correctness	55.5
Data transmission reliability	45.7	Invoice correctness	45.6	Data transmission reliability	48.7	Data transmission reliability	44.9
Invoice correctness	45.6	Data transmission reliability	44.1	Service selection	43.5	Service kindness	41.2
Service kindness	43.7	Professional ability	41.3	Service willingness	41.3	Remainder of the attributes with best grades are under 40%	
Remainder of the attributes with best grades are under 40%		Remainder of the attributes with best grades are under 40%		Invoice correctness	40.5		
				Reach of services	40.2		
				Contact person quality	40.2		
				Rest of the attributes with best grades are under 40%			

All the strategic groups have focused on the technical service quality in their strategy implementation. Only a few functional service quality variables are positioned at the top of

the ranking, including service willingness and service kindness. It is also common to the strategic groups that the service quality expectations are not fulfilled very well.

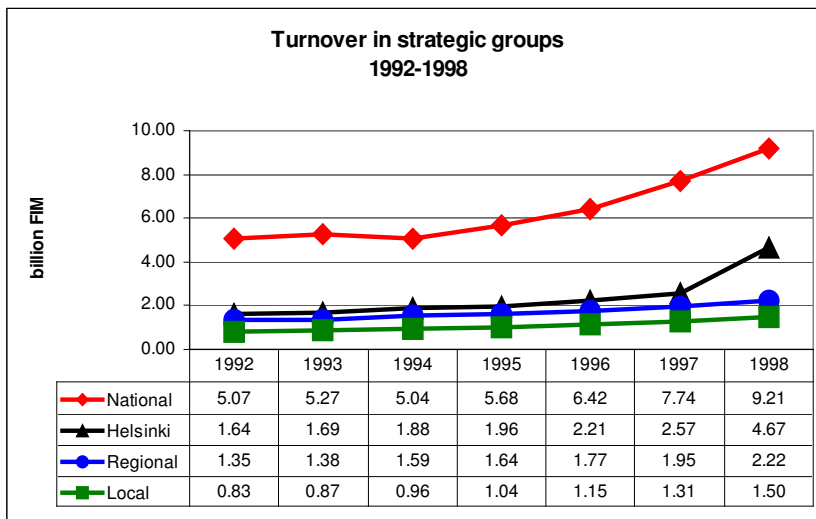
### 5.2.7. Economic performance in the strategic groups

In the ASP-model, two variables are defined to illustrate the economic performance of the firm. They are 'turnover share' and 'profitability'. The results of these variables are presented next, starting with the turnover share.

#### Turnover share

During the research period, the turnover growth was 97.8% within the FTC. It grew from FIM 8.9 billion to FIM 17.6 billion in 1998. There are however, remarkable differences in the turnover development between the strategic groups, as Figure 5.49 shows.

Figure 5.49 The turnover of the strategic groups

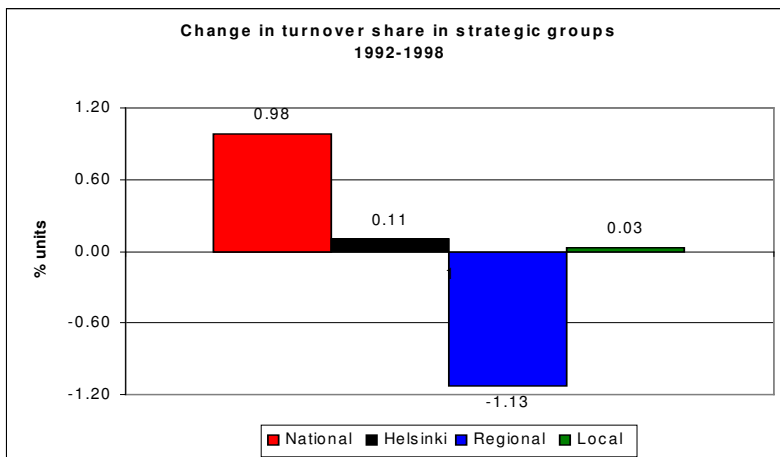


In the National Group, the turnover growth during the research period is 81.7%. This strategic group nearly doubled the turnover from FIM 5.07 billion to FIM 9.21 billion between 1992 and 1998. The increase in the Helsinki Group is 183.7% from FIM 1.64 billion to FIM 4.67 billion. The rate of increase was especially fast in 1998. This is partly

because Radiolinja became a part of Elisa. In the Regional Group the turnover growth is 65.3%. The absolute figures grew from FIM 1.35 billion in 1992 to FIM 2.2 billion in 1998. In the Local Group the turnover increased by 79.8% from FIM 0.83 billion to FIM 1.5 billion. Because of the different turnover growth figures, the turnover shares developed differently in different strategic groups, as illustrated in Figure 5.50.

The figure shows that the turnover share of the National Group grew by 0.98% -units from 57.0% in 1992 to 58.0% in 1998. The Helsinki Group also increased its share, by 0.11% -units from 18.5% to 18.6%. The Regional Group also increased its share, by 0.11% -units from 18.5% to 18.6%.

Figure 5.50 Change of the turnover shares in the strategic groups

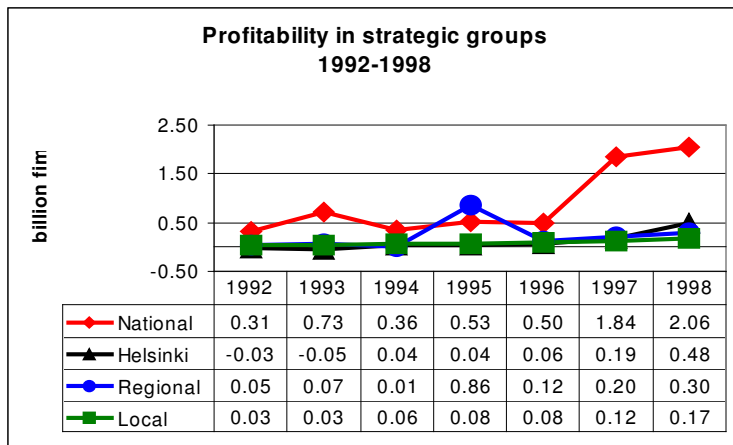


In round figures, the Local Group sustained its 9.4% share, because of the minor growth of 0.03% -units during the research period. The only turnover share decrease was to found in the Regional Group. Its turnover share decreased 1.13% -units from 15.4% in 1992 to 14.0% in 1998. Thus, in turnover figures show that the bigger group members the strategic group consists of, the greater the growth of the turnover share. In the Regional Group the decrease also follows this main growth tendency.

### Profitability

The telephone company profitability is the second economic performance variable in the ASP-model. In the present study the profitability variable was defined as the profitability of the telephone company before extraordinary items. The profitability as a whole in the FTC, grew from FIM 0.35 billion in 1992 to FIM 2.8 billion in 1998. This means a relative growth of 688.1%. The profitability growth can be found in every strategic group, despite the differences that Figure 5.51 illustrates.

Figure 5.51 Profitability of the strategic groups

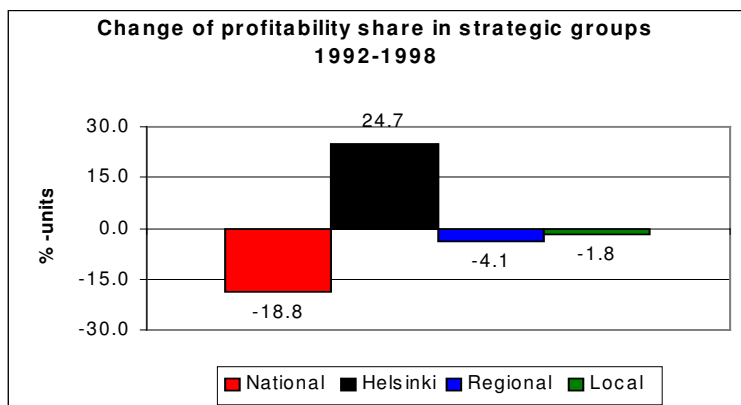


The National Group had a profitability level of FIM 0.3 billion in 1992.<sup>411</sup> Seven years later, the profitability was on the level of FIM 2.1 billion, an increase of 567.9%. The profitability development in the Helsinki Group was even faster. The negative profitability level of FIM 0.03 billion in 1992 increased to the positive level of FIM 0.5 billion in 1998.

In the Regional Group, the profitability development recorded a rapid growth of 504.9%. It is, however, the lowest among the strategic groups. In 1992, the profitability in this group was FIM 0.05 billion and in 1998 it was FIM 0.3 billion. At the beginning of the research period, the profitability in the Local Group was FIM 0.03 billion. In 1998, it reached the level of FIM 0.2 million representing a growth of 544.1%. The changes of the profitability shares variable also shows clear differences among the strategic groups as Figure 5.52 shows.



Figure 5.52 Change of the profitability shares in the strategic groups



In 1992, the profitability share of the National Group was 87.4% and 68.5% in 1998, which results in a decrease of 18.8% share units. The Regional Group lost its profitability share by 4.1% -units, from 14.0% in 1992 to the share of 9.9% in 1998. In addition, the Local Group lost its share by 1.8% -units from 7.5% in 1992 to 5.7% in 1998. Contrary to these decreasing development figures, the Helsinki Group increased its profitability share by 24.7% -units, from -8.9% in 1992 to 15.8% in 1998. Thus, the change in the profitability share goes mainly along the size of the telephone companies in the strategic groups. The strategic groups with bigger telephone companies lost their share compared to the strategic groups with small sized members. The Helsinki Group is an exception to this tendency.

#### Summarising the performance element results

In general, the economic performance growth is fast in the FTC. There are, however, remarkable differences between the strategic groups in the development, which can be seen in Table 5.11. The results show that in general the strategic groups with bigger sized group members have increased their turnover share more than the strategic groups with smaller sized members. Also the profitability share results between strategic groups equate with the size of the strategic group members. The smaller the members in the strategic groups the smaller, the decrease in the profitability share.

<sup>411</sup> The profitability of the National Group in 1992 and 1993 has been compiled by the controllers of Sonera.

Table 5.11 Changes in the economic performance in the strategic groups

Changes in the economic performance, %	National Group	Helsinki Group	Regional Group	Local Group
Turnover development, %	81.7	183.7	65.3	79.8
Turnover share in the FTC, % - units	0.98	0.11	-1.13	0.03
Profitability development, %	567.9	Clearly over 500	504.9	544.1
Profitability share in the FTC, %-units	-18.8	24.7	-4.1	-1.8

The table shows that two members of the strategic group do not follow the main tendency, namely the Regional Group and the Helsinki Group. The Regional Group shows the worst figures in terms of turnover and profitability development. Contrary to this, the Helsinki Group has the fastest turnover and profitability development figures.

#### 5.2.8. Summary of the strategy-performance results in the strategic groups

The ASP-model elements and variables show remarkable differences between the strategic groups. These differences mean that the strategies followed and the performances gained are different among the strategic groups. The most common explaining feature of the differences is the size of the strategic group members.

The results of the ASP-model show that the major scope market potential developed in the strategic groups that focused their operations on the bigger cities. The scope market image expectations between the strategic groups differ only slightly. The service expectations vary to some extent between the strategic groups. On the Helsinki Group scope market, in particular, the technical service expectation features are more emphasised than in the remaining strategic groups.

The resources among the strategic groups were on a very different level at the beginning of the research period, but also the development of the resource allocation shows differences. The strategic groups with bigger sized members increased their human resources - especially the education base - compared to the strategic group with smaller sized members. The similar phenomena are to be seen in the fixed assets growth and investments. The debt amount development also varies between the strategic groups - the National Group in

particular differs remarkably from the others by its absolute debt increase. On the other hand, the Local Group decreased its debts remarkably. It also increased, proportionally, its financial assets most among the strategic groups. Current assets are increased most in the strategic groups belonging to the FG. The results influence the solvency development.

The development of the logistics is twofold. On the one hand, the strategic groups with bigger sized members proportionally increased their fixed-access and personnel service power more than the strategic groups with smaller sized group members. On the other hand, when the National Group is excluded, the strategic groups with the smaller sized group members increased their payments to other telephone companies and the number of the outlet. All the strategic groups belonging to the FG significantly decreased the net capital costs.

The marketing element variables show that the volume growth is often the greatest in those strategic groups that include the big sized telephone companies. Clear marketing differences are also visible between the National Group and the rest of the strategic groups. The price development shows that the increase is the higher the bigger the companies that the individual strategic group includes – both on the company and on the household market. Advertising as a marketing variable was not in active use at the beginning of the research period. During the seven years, the National Group increased its advertising expenditures a great deal more than the rest of the strategic groups. FG affiliated companies also increased their advertising expenditures.

The internal process IE-index results show that the strategic groups moved closer to each other. The National Group and the Regional Group lost their position, while the Helsinki Group and the Local Group improved their position. The internal personnel research was carried out only in one strategic group, the results have a supporting explanatory role as far as the performance of the firm, in general, is explained. According to the market research results, the company image was evaluated to be on a fairly good level. The service quality evaluation results are at a lower level in some extent. The internal research results show that, in general, managers have slightly different points of view of the totality compared with the rest of the personnel.

The external process results also show differences between the strategic groups. According to the results, the bigger sized group members the strategic group has, the more it increased its market power in terms of total resources to be utilised in market exploitation. Also, the market research results show that the strategic groups are different compared to each other. Only the National Group has a national image. The rest of the groups are labelled as local operators. Technology, products and extensive resources are the most often used variables as to the strategic groups that include big sized telephone companies. A customer oriented approach identifies the strategic groups with small telephone companies. The realised service quality profiles are labelled by the technical service features in every strategic group. The service quality mean shows that no strategic groups have satisfactorily fulfilled the market needs.

In the ASP-model the economic performance is the final element. The Regional Group is an obvious loser in terms of turnover as the profitability among the strategic groups. The fastest turnover and profitability development figures are in the Helsinki Group. The National Group and the Local Group increased their turnover share, but lost their position in profitability shares. Thus, the strategic groups are different in comparison to each other with regard to performance gaining.

All the results presented above strongly support the argument that the strategy-performance models are different between the strategic groups. Thus, the results also support the argument that it is relevant to cluster the industry to strategic groups as far as the performance is explained by the followed strategy. Next, the explanatory and performance variables are observed with the help of principal component analyses, in order to enrich the understanding of the strategy-performance connections in the strategic groups.

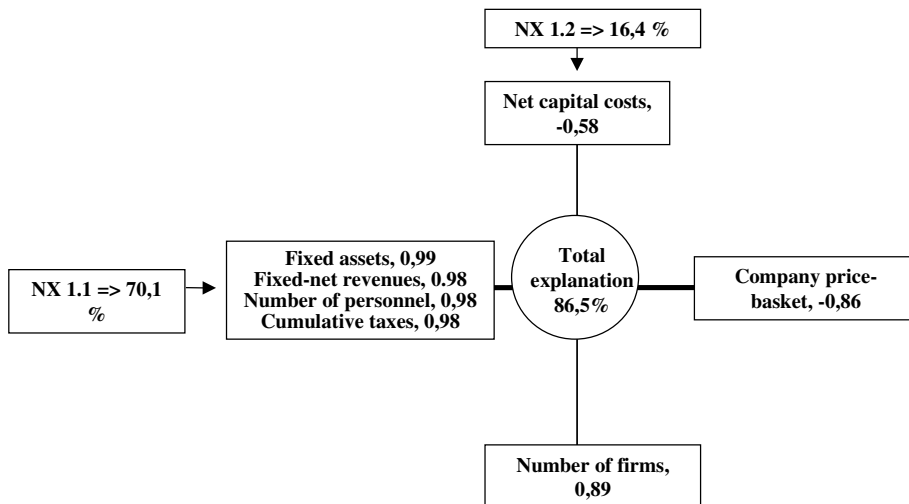
### 5.3 The results of the principal component analyses in the strategic groups

The ASP-model element results presented earlier in the present study show remarkable differences between the strategic groups in the FTC. This chapter further covers the principal components of the explanatory variables in the individual strategic groups, indicating the main strategies followed. Next, the performance principal components of the strategic groups are under scrutiny. Both analyses are carried out in two phases in each of the strategic groups. First the whole research period is covered. Then, the years from 1995 to 1998 are focused to explore possible changes in the strategies and the performance in the changed environment.<sup>412</sup> The discussion starts with the National Group.

#### 5.3.1 Explanatory and performance components in National Group

The principal component analyses in the National Group are first used to construct the strategy components NX1 (1992-1998) and NX2 (1995-1998), which will show the main strategy directions followed. The main results are illustrated in Figure 5.53.

**Figure 5.53 Explanatory principal components in the National Group, 1992-1998**



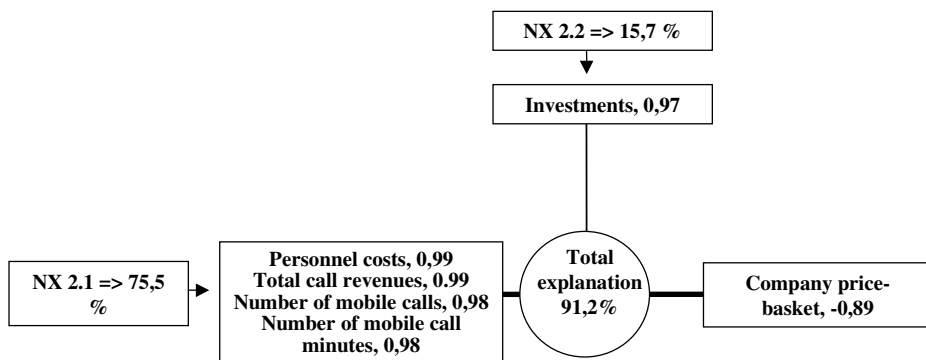
<sup>412</sup> The detailed key figures of the principal component analyses are in appendix 8.

As shown in the middle of figure, the total variance explanation power of the two main principal components NX1.1, in the horizontal axis, and NX1.2, in the vertical axis, is 86.5%. The high variable weights on these orthogonal axes show, through the individual variables, the main strategies followed in the National Group. The most powerful explanation variables in the component NX1.1, with the explanation power of 70.1%, are 'fixed assets' (0.99), the 'fixed-net revenues' (0.98), 'number of personnel' (0.98), 'cumulative tax amount' within the area of the telephone company (0.98) and on the opposite end of the axis the 'company price-basket' (-0.86).

By adding the second principal component NX2.1, the cumulative variance explanation power is further increased by 16.4%. 'The number of firms' (0.89) and 'net capital costs' (-0.58) are the most powerful explanation variables of the second principal component.

The contents of the principal components do change during the latest years of the research. The explanation power of the two principal components, that is NX2.1 and NX2.2, is as high as 91.2% during 1995-1998. Figure 5.54 shows the variance explanation power of the principal components during the latter period.

**Figure 5.54 Explanatory principal components in the National Group, 1995-1998**



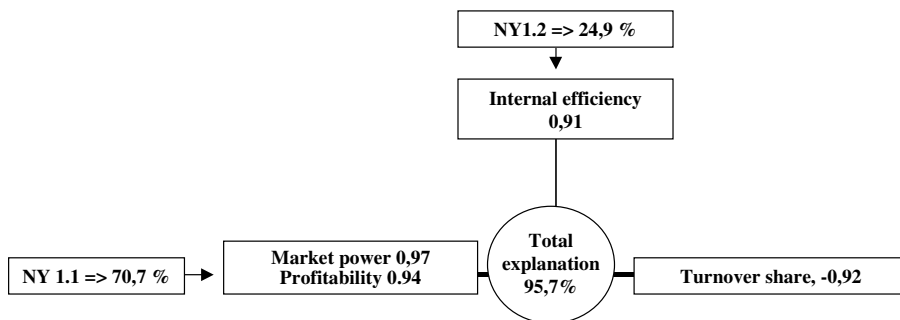
The variance explanation power of the principal component NX2.1 is 75.5%. Thus, it catches more of the variable variance than the first principal component of the years 1992-1998. The most correlated variables in NX2.1 are 'personnel costs' (0.99), 'total call revenues' (0.99), 'number of mobile phone calls' (0.99), 'mobile phone call minutes' (0.99)

and 'company price-basket' (-0.89). Component NX2.2 is reduced to 15.7%, compared with the result covering the total research period. In the second component NX2.2, 'investments' (0.97) is the most correlated variable.

The two principal component analyses show differences. The total explanation power increases in the second phase of analysis because of the increased explanation power of the first component. In the second analysis 'number of the personnel' is changed to 'personnel costs'. This also refers to the increase in personnel quality. 'Fixed-net revenues' in the first phase analysis is replaced in the main component of the second analysis phase by the mobile phone call services. Accordingly 'cumulative taxes' in the operation area of the National Group, is replaced by 'total call revenues'. In both of the analyses, the 'company price-basket' is in an important role.

In addition to the explanation components presented above, the ASP-model includes the performance element. The results of the performance components are also presented in two phases. First the results of the total research period of 1992-1998 are under observation as Figure 5.55 illustrates.

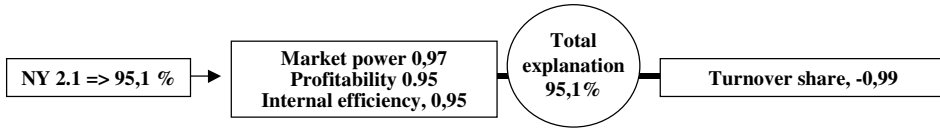
**Figure 5.55 Performance principal components in the National Group, 1992-1998**



The two National Group performance components capture as much as 95.7% of the total variance. The NY1.1 principal component explains 70.7 %. 'Market power' (0.97) and 'profitability' (0.94) as well as 'turnover share' (-0.92) are the most correlated performance variables. NY1.2 principal component explains 24.9%, the most correlated variable being 'internal efficiency' (0.91).

The principal component analysis from the data 1995-1998, resulted in one powerful component as Figure 5.56 shows.

**Figure 5.56 Performance principal components in the National Group, 1995-1998**

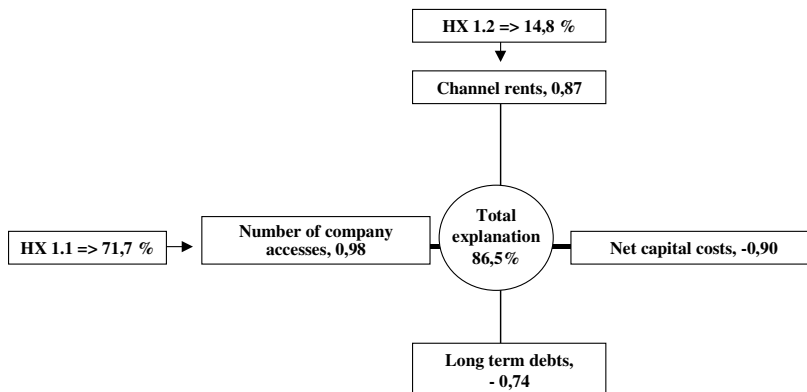


In the second phase of the performance analyses, the total explanation power of the performance components is as high as 95.6%. Of this total correlation component, NY2.1 explains 95.1%. The most correlated variables are 'market power' (0.99), 'profitability' (0.95), 'internal efficiency' (0.95), and on the other end of the axes, 'turnover share' (-0.99). The second principal component NY2.2 captures only 4.6% of the variation, and all the variables are weakly correlated with the second component, under the correlation of 0.35. Altogether, both of the analyses show that 'market power' and 'profitability' together with 'turnover share' are the main performance principal components. 'Internal efficiency' played an important role after the deregulation.

### 5.3.2 Explanatory and performance components in the Helsinki Group

In the Helsinki Group, the strategy indicators are also observed during the period of 1992-1998 and 1995-1998. Figure 5.57 shows the strategy principal components from the total research period.

**Figure 5.57 Explanatory principal components in the Helsinki Group, 1992-1998**

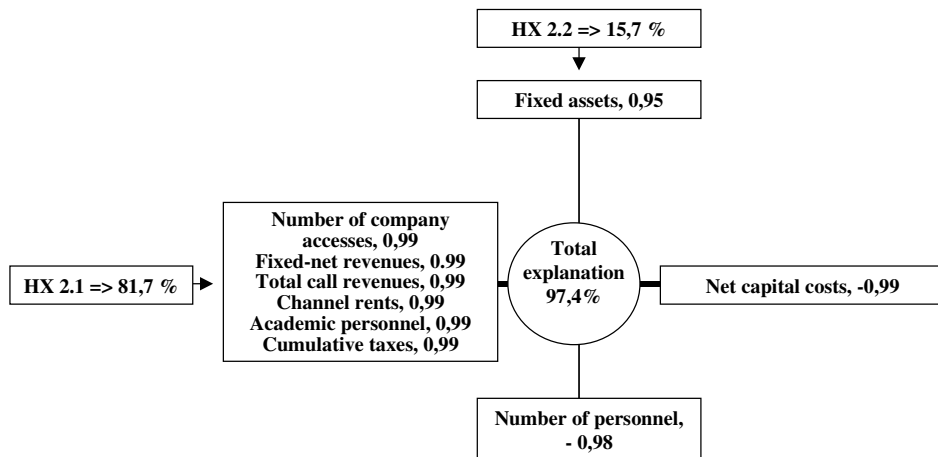




The variance explanation power of the two main principal components is 86.5% in total. The first component HX1.1 captures 71.7% of the variance, while HX 1.2 explains 14.8%. In HX1.1, the most notable explanatory variables with high correlation values are 'number of firm-accesses' (0.98) and 'net capital costs' (-0.90). In the second component HX1.2, the most correlated variables are 'channel rents' (0.87) and 'long term debts' (-0.74).<sup>413</sup>

In the analysis from 1995-1998, the most relevant explanatory variables in the principal components change. This is illustrated in Figure 5.58.

**Figure 5.58 Explanatory principal components in the Helsinki Group, 1995-1998**



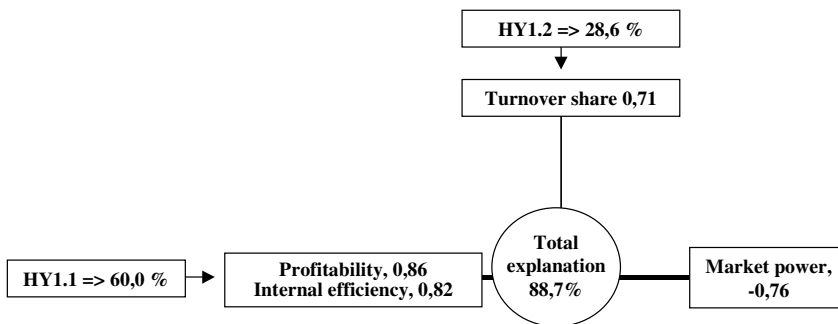
The principal components from the data of 1995-1998 explain as much as 97.4% of the total variance. The main principal component, HX2.1, is able to explain 81.7%. The most relevant variables have a high correlation value of 0.99. The variables are 'number of firm accesses', 'personnel with academic education', 'total call revenues', 'cumulative tax amount' in the telephone company operation area, 'fixed-net revenues' and 'channel rents' as well as 'net capital costs'. The second principal component HX2.2 explains 15.7% of the total variance. In this component, the most correlated variables are 'fixed assets' (0.95) and 'number of personnel' (-0.98).

<sup>413</sup> Before 1994 Helsinki Group paid tariffs for long-distance and international calls to Sonera. After deregulation the payments included payments for long-distance, international and mobile phone calls to companies, where the Helsinki Group is one of the main owners.

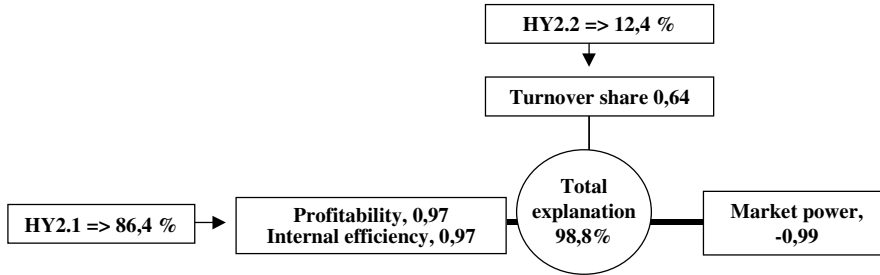
Altogether, in the Helsinki Group, it appears that 'number of firm accesses' and 'net capital costs' play an important role in both of the analyses. However, the first explanation principal component from the period 1995-1998 differs from the total period because of the increased number of explanatory variables with high correlation is attached to the first principal component. The role of human resource quality as well as the scope potential gathers importance in the second phase analysis. The logistic variable 'channel rents' and marketing variable 'total call revenues' have strengthened during the years 1995-1998.

In keeping with the analyses procedures in all strategic groups, the performance principal component results in Helsinki Group are observed next. Figure 5.59 shows the results of the total research period and further illustrates how the two performance principal components HY1.1. and HY1.2. capture 88.7% of the total performance variance in the data from the years 1992-1998. HY1.1. explains 60.0% including the variables 'profitability' (0.86) and 'internal efficiency' (0.82) on the one hand and 'market power' (-0.76) on the other hand. Respective HY1.2 increases the explanation power by 28.6%, where 'turnover share' (0.71) is the most correlated variable.

**Figure 5.59 Performance principal components in the Helsinki Group, 1992-1998**



The second phase performance principal component analysis results increase the role of 'market power', 'internal efficiency' and profitability as Figure 5.60. shows.

**Figure 5.60 Performance principal components in the Helsinki Group, 1995-1998**

The performance principal component analysis from the years 1995-1998 raises the variance explanation power up to 98.8%. From the total variance the performance component HY1.2 explains 86.4%. In this component, 'market power' (0.99), 'internal efficiency' (-0.97) and 'profitability' (0.97) are the most relevant variables. The second performance component HY2.2 catches 12.4% of the variance with the variable 'turnover share' (0.64), which is clearly on a lower level compared with the second component explanation result shown earlier in Figure 5.59.

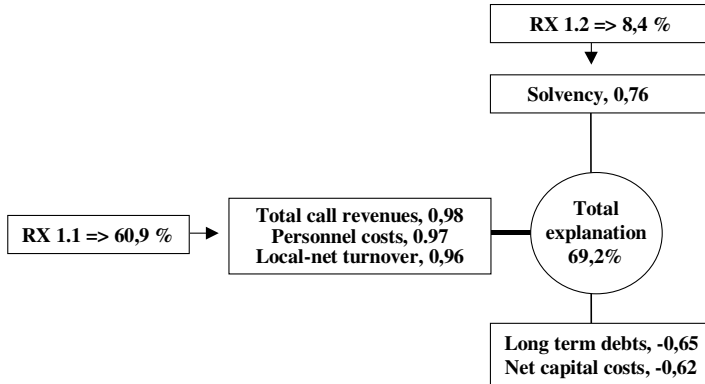
The performance analyses show that 'profitability', 'internal efficiency' and 'market power' are the most important performance variables in the Helsinki Group during the whole research period of 1992-1998. They all strongly increased their relevancy, as the competitive environment grew more liberated during the years 1995-1998.

### 5.3.3 Explanatory and performance components in the Regional Group

The results of the principal component analyses in the Regional Group are also presented in two phases. The main results of the analysis during 1992-1998 are shown in Figure 5.61.

Like in the other strategic groups, the explanation principal component identification is presented first followed by the results of the performance principal components. Figure 5.61 illustrates that the total variance explanation power of the principal components RX1.1

**Figure 5.61 Explanatory principal components in the Regional Group, 1992-1998**



and RX1.2 is 69.2%, in which the first component explains 60.9%. In RX1.1 the most relevant variables are 'total call revenue' (0.98), 'personnel costs' (0.97) and 'local-net turnover' (0.96). The component RX1.2 explains only 8.4% of the total variance. 'solvency' (0.76)', 'long term debts' (-0.65) and 'net capital costs' (-0.62) are the most relevant variables.

In the analysis of the Regional Group from the years 1995-1998, the most relevant principal components produce a total explanation of 72.8%, of which the first principal component RX2.1 explains 64.0% and the second component RX2.2 the additional 8.7%.

**Figure 5.62 Explanatory principal components in the Regional Group, 1995-1998**

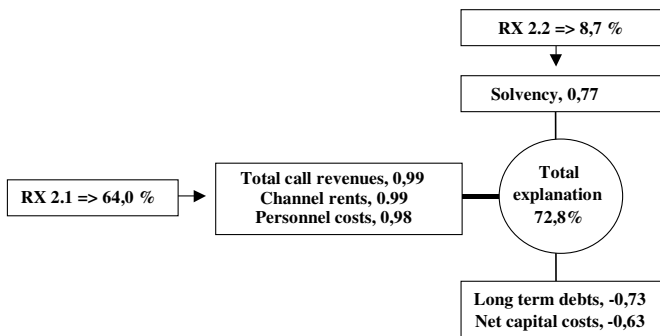
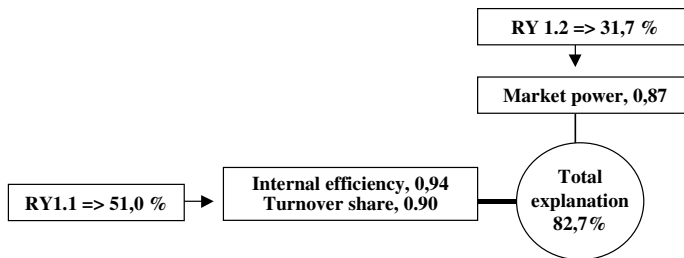


Figure 5.62 shows that these components include similar variables as the results from the years 1992-1998. In RX2.1, the most correlated variables are 'total call revenue' (0.99), 'channel rents' (0.99) and 'personnel costs' (0.98). In RX2.2, the most relevant variables are 'solvency' (0.77), 'long term debts' (-0.73) and 'net capital costs' (-0.63). In actual fact, only the variable 'local net turnover' in the first analysis has been changed to the variable 'payments to other operators' in the second phase.

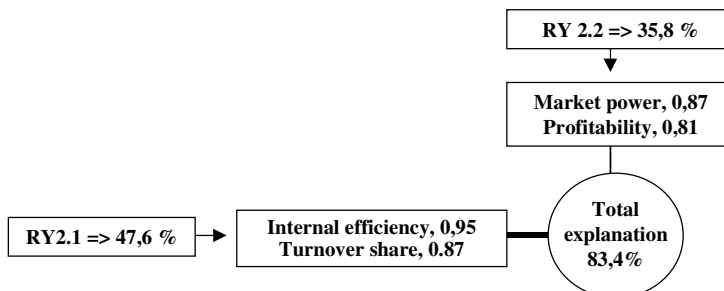
With regards to principal performance component results from the years 1992-1998, Figure 5.63 shows that the total variance explanation power of the two main principal performance components is as high as 82.7%. The principal component RY1.1 explains 51.0% of the total variance and the second component RY2.1 31.7%.

**Figure 5.63 Performance principal components in the Regional Group, 1992-1998**



In RY1.1, the highly correlated variables are 'internal efficiency' (0.94) and 'turnover share' (0.90). In RY1.2 'market power' as the only relevant variable has a correlation value of 0.87. The results of the similar analysis from the years 1995-1998 are very similar to the analysis results of the first phase. This can be seen in Figure 5.64, where the total explanation power of 83.4% is shown.

**Figure 5.64 Performance principal components in the Regional Group, 1995-1998**

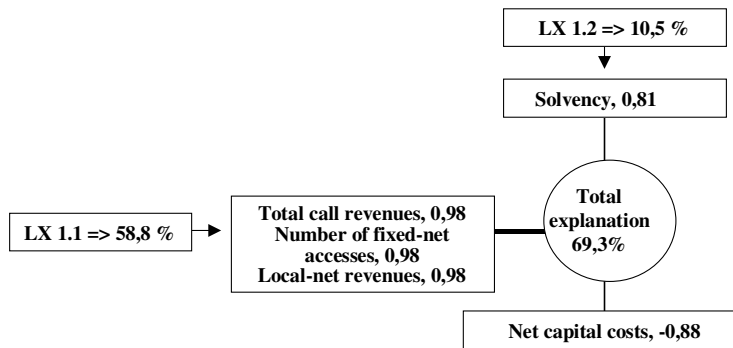


RY2.1 explains 47.6% of the most relevant performance variables those being 'internal efficiency' (0.95) and 'turnover share' (0.87). RY2.2. captures an additional 35.8% of the total variance, where 'market power' (0.87) and 'profitability' (0.81) are the most correlated variables.

### 5.3.4 Explanatory and performance components in the Local Group

Like in the other strategic groups the principal component analyses were carried out in the Local Group. Firstly, the explanation variable results will be presented, followed by the performance variables. The presentation of results begins with the principal explanatory components from 1992-1998, which is shown in Figure 5.65.

**Figure 5.65 Explanatory principal components in the Local Group, 1992-1998**

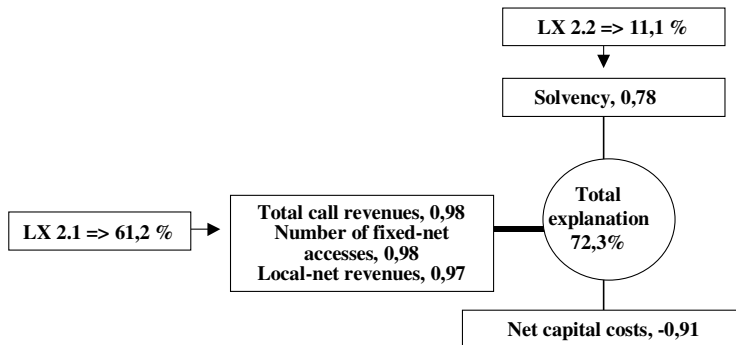


The figure shows that the total explanation power of the two main principal components is 69.3%. The first component LX1.1. explains 58.8%, in which the most significant variables are 'total call revenues' (0.98), 'number of fixed-net accesses' (0.98) and 'local-net turnover' (0.98). The second component LX2.2. additionally catches 10.5% of the total variance. In this component, the most correlated variables are 'solvency ' (0.81) and 'net capital costs' (-0.88).

In the Local Group, the second phase of analysis for the years 1995-1998, shows that the main results follow almost identically the results of the first phase principal component analysis, but the explanation power increases to 72.3%. This result consists of the principal explanation components, LX1.2, which explains 61.2%, and the second component LX2.2, which explains 11.1% of the total variance. The most correlated variables in LX1.2 are

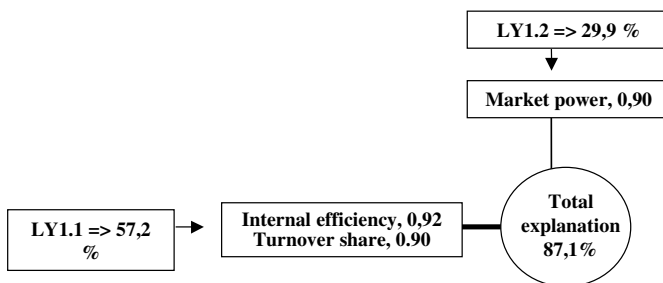
'total call-revenues' (0.98), 'number of fixed-net accesses' (0.98) and 'local-net turnover' (0.97). In LX2.2, the most correlated variables are 'net capital costs' (0.91) and 'solvency' (0.78). These results are shown in Figure 5.66.

**Figure 5.66 Explanatory principal components in the Local Group, 1995-1998**



In the Local Group, both principal performance component analyses, in 1992-1998, and in 1995-1998, are rather similar. The first phase analysis results are shown in Figure 5.67.

**Figure 5.67 Performance principal components in the Local Group, 1992-1998**

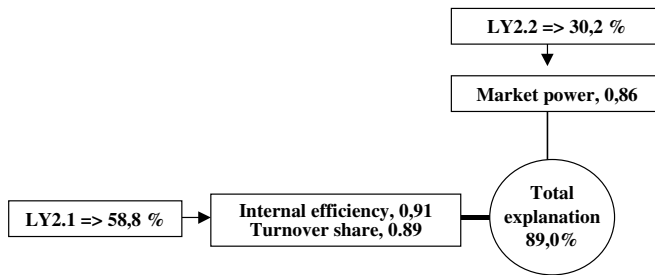


The analysis result shows a total performance explanation power of 87.1%. Of this, the principal component LY1.1 explains 57.2%. In this component, 'internal efficiency' (0.92) and 'turnover share' (0.90) have the highest correlation. In the second component, LY1.2, market power with its correlation value (0.90) is the only relevant variable. The total explanation power of this component is 29.9%. The performance components from the

period of 1995-1998 do not show any differences compared with the first analysis. The results are presented in Figure 5.68.

The total explanation power of the data from 1995-1998 is 89.0%. The component LY1.1 explains 58.8%, in which the most correlated variables are 'internal efficiency' (-0.91) and 'turnover share' (0.98). The component LY2.2 explains 30.2%, and 'market power' (0.86) has the highest correlation.

**Figure 5.68 Performance principal components in the Local Group, 1995-1998**



### 5.3.5 Summary of the principal component analyses

The results of the principal component analyses clearly show the benefits of the strategic group approach as the strategy-performance connections have to be defined. There are remarkable differences between the strategic groups with regard to principal component analyses results, variables, and their role. Also, the size of the telephone company as the clustering criteria shows relevant explanation power. The main results are in Table 5.12.

The total explanation power of the principal explanatory components in every strategic group increases as the focus is changed from the total research period to the years 1995-1998. The results also show that the bigger the members in the strategic groups, the more the explanation power of the first principal explanatory component are changed. In addition, the main explanatory and performance components show clear differences between the strategic groups with bigger telephone companies compared to the strategic groups with smaller companies.



Table 5.12. The results of the principal component analyses in the strategic groups

Period	1992-1998			1995-1998		
Strategic Groups	Components / variables (explanation power, %)		Cumulative explanation power %	Components/ variables (explanation power, %)		Cumulative explanation power %
National Group	Explanatory component NX1.1 (70,1 %)	Explanatory component NX1.2 (16,4 %)	86,5	Explanatory component NX2.1 (75,5 %)	Explanatory component NX2.2 (15,7 %)	91,2
	*Fixed assets *Fixed-net revenues *Personnel size *Cumulative taxes *Company prices	*Capital costs *Number of firms		*Personnel costs *Mobile-net exploitation *Company prices	*Investments	
	Performance component NY1.1 (70,7 %)	Performance component NY1.2 (24,9 %)		Performance component NY2.1 (95,1 %)		
	*Market power *Profitability *Turnover share	*Internal efficiency	*Market power *Profitability *Internal efficiency *Turnover share			
Helsinki Group	Explanatory component HX1.1 (71,7 %)	Explanatory component HX1.2 (14,8 %)	86,5	Explanatory component HX2.1 (81,7 %)	Explanatory component HX2.2(15,7 %)	97,4
	*Company accesses *Capital costs	*Payments to other operators *Long term debts		*Company accesses *Fixed-net revenues *Channel rents *Total call revenues *Academic personnel *Cumulative taxes *Capital costs	*Fixed assets *Number of personnel	
	Performance component HY1.1 (60,0 %)	Performance component HY1.1 (28,6 %)		Performance component HY2.1 (86,4 %)	Performance component HY2.2 (12,4 %)	
	*Profitability *Internal efficiency *Market power	*Turnover share *Market power	*Market power *Internal efficiency *Profitability	*Turnover share		
Regional Group	Explanatory component RX1.1 (60,9 %)	Explanatory component RX1.2 (8,4 %)	69,2	Explanatory component RX2.1 (64,0 %)	Explanatory component RX2.2 (8,7 %)	72,8
	*Personnel costs *Local-net revenues *Total call revenues	*Long term debts * Capital costs * Solvency		*Channel rents *Total call revenues *Personnel costs	*Long term debts * Capital costs * Solvency	
	Performance component RY1.1 (51,0 %)	Performance component RY1.2 (31,7 %)		Performance component RY2.1 (47,6 %)	Performance component RY2.2(35,8 %)	
	*Internal efficiency *Turnover share	*Market power	*Internal efficiency *Turnover share	*Market power *Profitability		
Local Group	Explanatory component LX1.1 (58,8 %)	Explanatory component LX1.2 (10,5 %)	69,3	Explanatory component LX2.1 (61,2 %)	Explanatory component LX2.2 (11,1 %)	72,3
	*Total call revenues *Fixed-net accesses *Local-net revenues	* Capital costs * Solvency		*Total call revenues *Fixed-net accesses *Local-net revenues	* Capital costs * Solvency	
	Performance component RY1.1 (57,2 %)	Performance component RY1.1 (29,9 %)	87,1	Performance component RY1.1 (58,8 %)	Performance component RY1.1 (30,2 %)	89,0
	*Internal efficiency * Turnover share	*Market power		*Internal efficiency *Turnover share	*Market power	

The table shows that the greatest changes in the variables of the two periods measured can be noticed in the National Group and in the Helsinki Group. Both strategic groups changed their strategies after 1994 by emphasising new service possibilities, the personnel and the resources included in the fixed assets. Conversely, the Regional Group has its strategy basis on total call revenues and personnel resources during both periods. The most remarkable change appears in the diminished role of 'local net revenues', which changed to 'channel rents'. The Local Group based its strategies on the local service areas during both periods.

Furthermore, the development of mobile call services, company prices, personnel costs and investments play the primary role in the National Group after the deregulation in 1994. The Helsinki Group also changed its strategies after 1994, when the strategy comprised a large coverage of scope, resource, marketing and logistics variables. In the Regional Group, only a few changes occurred during the latter period. Similarly, in the Local Group hardly any changes in explanation or performance components can be observed despite the changing competitive environment.

The main principal performance components increase their explanation power in every strategic group during the years 1995-1998 in comparison to the results of the total research period. In the National Group, performance is focused towards 'market power', 'turnover share' and 'profitability'. In the Helsinki Group, 'profitability', 'internal efficiency' and 'market power' are the most important performance areas during both of the measured time periods. In the Regional Group and the Local Group, the performance components are very similar during both periods. The performance is focused mainly on the internal efficiency together with turnover.

Altogether, the results of the principal component analyses, and the strategy and performance development results, follow similar strategy-performance connection directions in each of the FTC strategic groups. The differences between the strategic groups are evident. Both of these analysis methods also clearly show the advantages of the strategic group clustering in comparison to the analysis of the FTC as a whole. These conclusions will be discussed next, in more detail.

#### 5.4 The best and worst performers in the strategic groups

The research objectives include the strategy difference by exploring the best and worst performers in the strategic groups. To understand more of the strategy-performance connections, the differences are explored along the elements of the ASP-model. This is performed in the Regional Group and the Local Group, because the National Group and the Helsinki Group consist of only one member and their strategy-performance models were presented earlier. The best and worst performer criterion is the ability to gain turnover and profitability.

##### 5.4.1 The best and the worst performers in Regional Group

The best performers in the Regional Group are Oulu and Tampere telephone companies and the worst performers are Turku and Vaasa telephone companies. In addition, to the turnover and profitability Table 5.13 shows the IE -index and market power results.<sup>414</sup>

Table 5.13 The Regional Group's best and worst performers, the performance changes

Telephone company	The turnover share change, %	The profitability share change, %	The IE -index change, %	The market power share change, %
Oulu	0,38	1,12	32,1	-0,43
Tampere	0,24	2,85	39,3	-1,70
Turku	-0,55	-6,98	-10,4	0,25
Vaasa	-0,62	-1,01	31,4	-1,17

The table shows that the best performing telephone companies generally have the best economic results in several of the performance areas measured. In comparison, the poor performers are the worst in most of the performance results. Both the turnover and the profitability development in Oulu and Tampere telephone companies are on a better level than the comparable figures in Vaasa and Turku telephone companies. An exception is the positive market power share change in the Turku telephone company.<sup>415</sup>

In the Regional Group, the potential is defined through the population, the cumulative taxes and the number of firms in the operational area of the telephone companies.<sup>416</sup> Figure 5.69

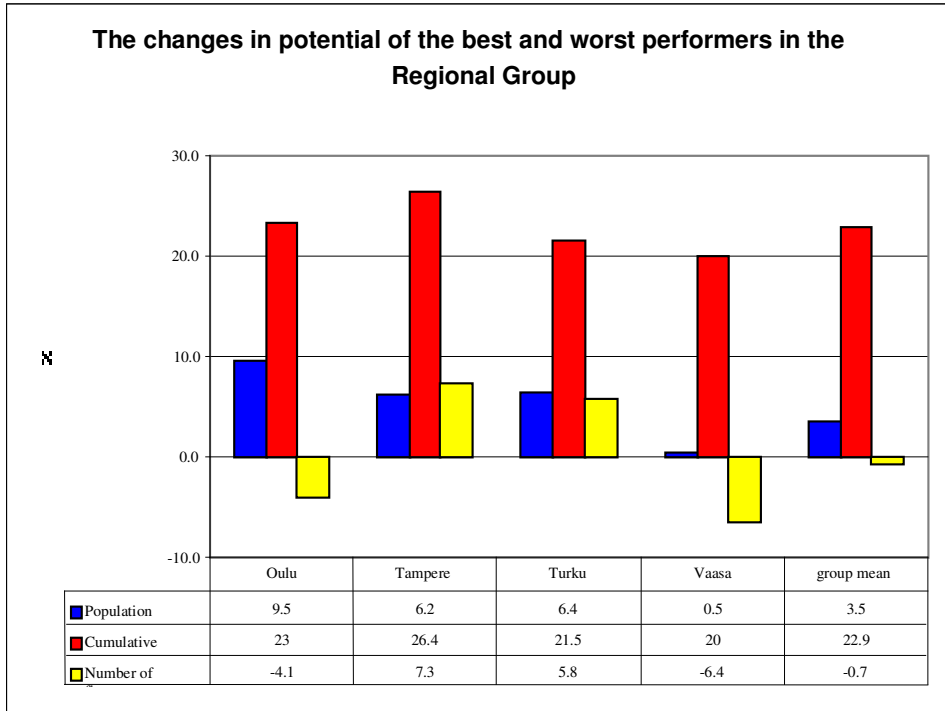
<sup>414</sup> The change turnover, profitability and market power shares are calculated from the totality of FTC.

<sup>415</sup> The balance sheet development of Turku telephone company is strongly affected by the debt growth.

<sup>416</sup> The market research show differences, but interpretations cannot drawn because of the limited data.

shows that the changes in market potential differ between the best and worst performing telephone companies.

Figure 5.69 The Regional Group's best and worst performers, changes in potential

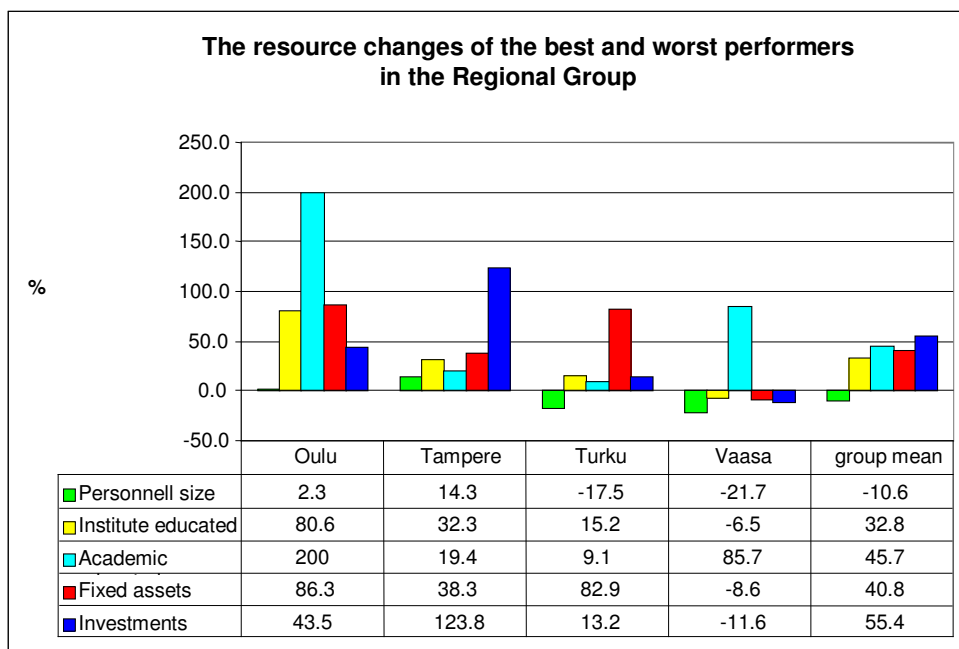


The changes in the population, and especially in the cumulative taxes, on the scope market of the best performing telephone companies, are higher than the comparable figures in the poor performing telephone companies, and the strategic group mean. The number of the company development on the market is the highest in Tampere and Turku telephone company operating areas, which also have the greatest company potential. Vaasa and Oulu telephone companies have decreasing numbers in this respect.<sup>417</sup> In the Regional Group the resource changes of the best and the worst performers also show differences. This is shown in the two following Figures 5.70 and 5.71.

Figure 5.70 shows that, as a whole, the best performing telephone companies have made decisions in favour of personnel size growth. As a whole, the improvement of the personnel basic education level has also been in focus in the resource decisions. The poorly

performing telephone companies decreased their personnel size more than the strategic group members on average. Also, the improvement of the basic education level is in round figures below the best performers and the strategic group mean. The positive change of the academic personnel in the Vaasa telephone company is an exception.

Figure 5.70 The Regional Group's best and worst performers, resource changes (1)



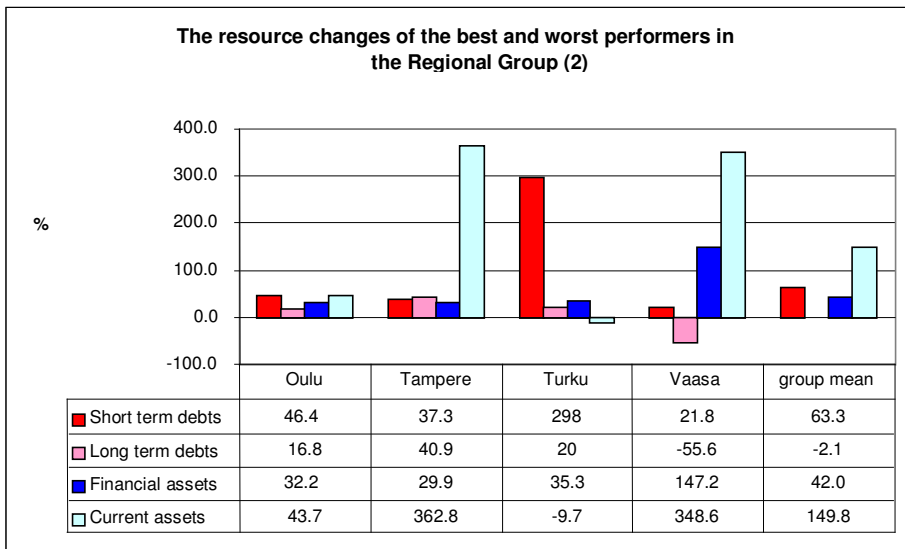
The development of the fixed assets and the investments in the Regional Group show differences between the best and worst performers. As a whole, they developed faster in Oulu and Tampere telephone companies, in comparison to the poorly performing telephone companies in Vaasa and Turku, which were below the strategic group mean.

The debts, financial and current assets also show differences between the best and the worst performing telephone companies in the Regional Group. This is illustrated in Figure 5.71. It shows that the long term debt development figures in particular are higher in the best performing telephone companies in Oulu and Tampere, than the development in the poorly performing telephone companies and the strategic group mean. The decrease of the long term debts in the Vaasa telephone company is remarkably fast.

<sup>417</sup> The company development parallels the general development in big cities in Finland.

The short term debt increase in the Turku telephone company is also very fast, but it does not change the total picture of the development of the debts. It is notable, that the development of the financial assets in the best performing telephone companies does not exceed the strategic group mean and are situated on a lower level, than in the poor performing telephone companies.

Figure 5.71 The Regional Group's best and worst performers, resource changes (2)



More differences are to be found as the logistics element of the strategy-performance model is observed. The main results are presented in the Figure 5.72. As the figure shows, Oulu and Tampere telephone companies show higher growth rates in fixed access, personnel costs and channel rents than the two poor performers. Indeed, the Tampere telephone company increased the fixed-net company accesses and the development of payments faster than the other telephone companies. The poor performers, Turku and Vaasa telephone companies, actually decreased their fixed-net accesses.

The growth of the personnel costs in the best performing telephone companies are on a much higher level compared with the strategic group mean and the poor performing Turku and Vaasa telephone companies.

Figure 5.72 The Regional Group's best and worst performers, changes in logistics

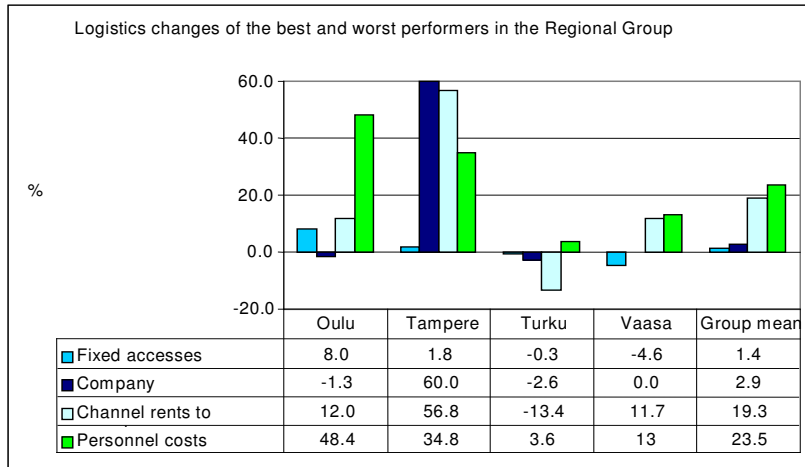


Table 5.14 shows that the capital costs development changes in the telephone companies vary remarkably between the best and the worst performers.

Table 5.14 The Regional Group's best and worst performers, capital cost changes

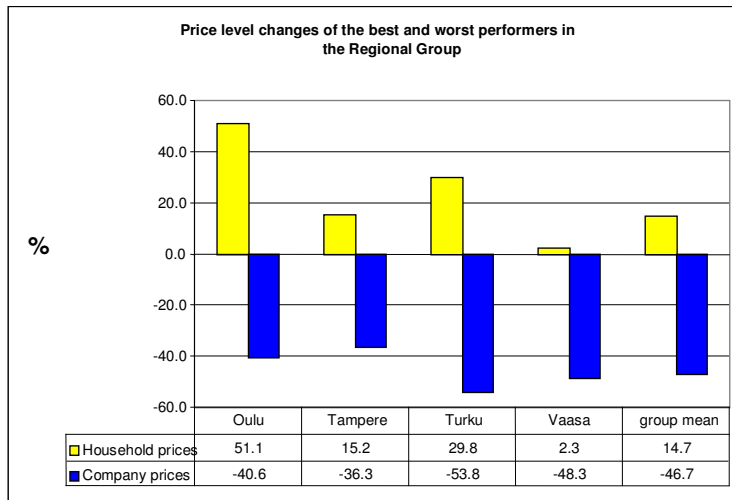
Telephone Company	Oulu	Tampere	Turku	Vaasa	Group mean
Capital cost change, %	-29,6	31,5	127,6	-443,4	23,4

The quickly decreased capital costs in the Vaasa telephone company are due to the debt amortizations. Respectively, the Turku telephone company greatly increased its capital costs because of the total debt growth. One of the best performers, the Tampere telephone company, increased its capital costs, while the Oulu telephone company decreased them.

There are also differences among the marketing variables between the best and the worst performers. The presentation of the differences within the Regional Group begins with the price level changes, as illustrated in Figure 5.73. The figure shows that the price strategy of the best and the worst performers differs from each other. The best performer, the Oulu telephone company, substantially increased the prices for households, by over 50%, during the research period. The Tampere and Turku telephone companies also exceeded the strategic group household price level mean. The respective household price level growth of

the Vaasa telephone company is 2.3%. Thus, the price level increase of the best performers is, on average, more than the household price increase mean in this strategic group. The best performing telephone companies reduced the prices for companies clearly less than the poor performing telephone companies, and less than the telephone companies on average in this strategic group. Actually, the price reductions in the worst performing telephone companies are greater than the reductions in the group on average.

Figure 5.73 The Regional Group's best and worst performers, the price changes



Another clear difference between the worst and the best performers is to be seen in the services revenue development. This is illustrated in Figure 5.74, which shows that the figures of the local turnover, the phone call revenue, the fixed-net revenues, and mobile call service developments in Oulu and Tampere telephone companies are all at remarkably high levels in comparison to the poorest performing Turku and Vaasa telephone companies.<sup>418</sup>

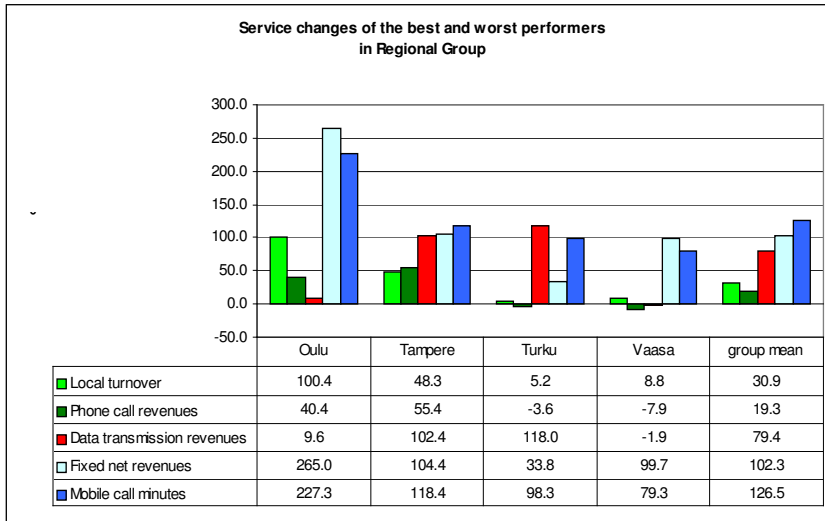
As can be seen from the figure below, the service development figures of the Turku and Vaasa telephone companies are mostly on a much lower level than the figures of the best performers and the strategic group mean. The revenue of the data transmission development in the Turku telephone company, which is over the strategic group mean, is the only

<sup>418</sup> The growth of mobile call units in Oulu is nearly 1760 %, Tampere 1530 %, Turku 1718 % and Vaasa 1805 %. The strategic group growth mean is 1844 %:



exception. The best performers exceed the strategic group mean and the development of the poor performers in nearly all of the services.

Figure 5.74 Regional Group best and worst performers, the service level changes



As Figure 5.33 showed earlier, advertising was not actively used in the Regional Group. The strategic group advertising development mean was 342.5% during the research period. The high growth indicates only the beginning of advertising utilisation. In the Oulu telephone company the advertising growth rate was 155%, in Tampere 373.3%, in Turku nearly 660%, and in the Vaasa telephone company 197.1%.

In all, the strategy and performance results of the best and the worst performing telephone companies in the Regional Group are summarised in Table 5.15. The results show that the market potential of the best performers grew more than the potential of the poor performers in the Regional Group. The operating areas of the best performing telephone companies are in the growing cities in Finland. In general, the best performers increased their resources to prepare themselves for new scope and potential more than the poor performers, which emphasised their financial position.

Table 5.15 The Regional Group, a summary of the best and the worst performer models

Differentiating features of the best and worst performers	Regional Group	
	The best performers Oulu and Tampere	The worst performers Turku and Vaasa
Environment	* Reasonable growth in potential	* Minor growth in potential
Resources	* Strong growth in personnel size and education level	* Personnel size decrease and small growth in education level
	* Reasonable growth in physical resources	* Small growth in physical resources
	* Growth in external financing	* Decreased or small growth in external financing
	* Increase in financial and current assets	* Strong growth in financial and current assets
Logistics	* Growth in fixed-net access	* Decrease or minor growth in fixed-net accesses
	* Strong growth in channel rents	* Small growth in channel rents
	* Strong growth in personnel costs	* Small growth in personnel costs
	* Small decrease or increase in capital costs	* Strong growth or decrease in capital costs
Marketing	* High household price growth * Cautious company price decrease	* Cautious growth in household prices * Great company price decrease
	* Remarkable growth in local revenues	* Small growth in local revenues
	* Remarkable growth in phone call revenues	* Decrease in phone call revenues
	* Remarkable growth in fixed-net revenues	* Cautious growth in fixed-net revenues
	* Clear growth in mobile phone call services	* Growth in mobile phone call services
	* Growth in data transmission revenues	* Growth or decrease in data transmission revenues
	* No active advertising	* No active advertising
Performance	* Growth in turnover and profitability shares	* Decrease in turnover and profitability shares

It appears that the best performers increased their logistic possibilities clearly more than the poor performers. The clear differences can also be seen in the activity level of the marketing activities and pricing decisions. The best performers succeeded to increase a great deal more of their service revenues than the poor performers. One important explanation is that the best performers increased their household prices more than the poor performers, and decreased the prices for companies less than the poor performers.

The strategies of the best performers resulted in an increase in turnover and profitability shares. The poor performers lost out in both parameters.

#### 5.4.2 The best and worst performers in the Local Group

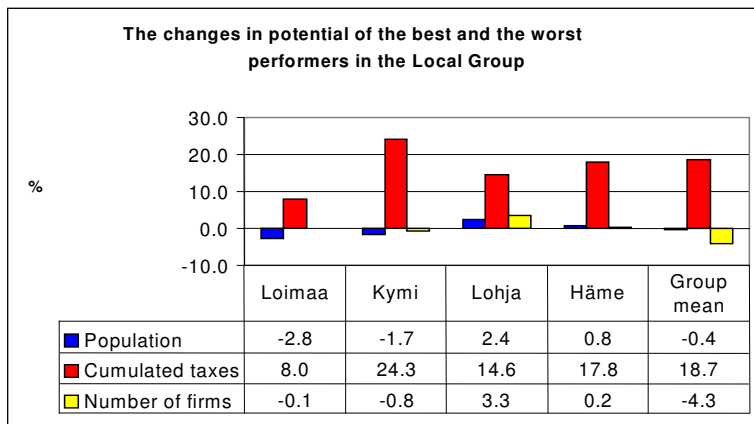
The best performing telephone companies in the Local Group are the Loimaa and Kymi telephone companies. The worst performers are the Lohja and Häme telephone companies. The performance results of these operators are presented in Table 5.16. In addition to the turnover and profitability shares the IE-index and market power results are included.

Table 5.16 The Local Group's best and worst performers, the performance changes

Telephone company	The turnover share change, %	The profitability share change, %	IE -index change, %	The market power share change, %
Loimaa	0,76	0,41	462,50	0,02
Kymi	0,16	0,43	11,00	-0,01
Lohja	-0,12	-0,27	14,10	-0,27
Häme	-0,19	-1,20	44,60	-0,55

The figures in the table show that the best performers are the best in almost all of the result categories. Consequently, the poorest performers are the worst almost in every performance category. The only exception is the result of internal efficiency change. The Lohja and Häme telephone companies, as the poorest performers even go beyond the level of the best performers of this strategic group. These results are the consequences of the followed strategies. Thus, the strategy results are presented next by following the order of the strategy-performance model elements, starting by the exploring the changes on the scope market, the results of which are illustrated in Figure 5.75.

Figure 5.75 The Local Group's best and worst performers, changes in potential



The potential variables show that the population reduction in the area of the best performing Loimaa and Kymi telephone companies is greater than the strategic group reduction mean. The poorest performers, Lohja and Häme, witnessed a small population growth. On the other hand, they operated in areas where the number of companies developed better than in the area of the Local Group on average.

The potential decreased remarkably among the best performing telephone companies. Conclusions from the tax development between the best and worst performers cannot be drawn. The resource changes between the best and worst performing telephone companies also show differences. The results are presented in Figures 5.76 and 5.77.

The results show that the poorest performers, the Lohja and Häme telephone companies decreased their personnel size more than the telephone companies in the average and more than the best performers. The Loimaa company also decreased its personnel size, but at the same time reconstructed the educational base by hiring higher educated personnel more than the other telephone companies in the Local Group. A comparable figure for the Kymi telephone company is not available. A number of academic personnel stayed on the same level during the whole research period both among the best and the worst performers.

Figure 5.76 The Local Group's best and worst performers, the resource changes (1)

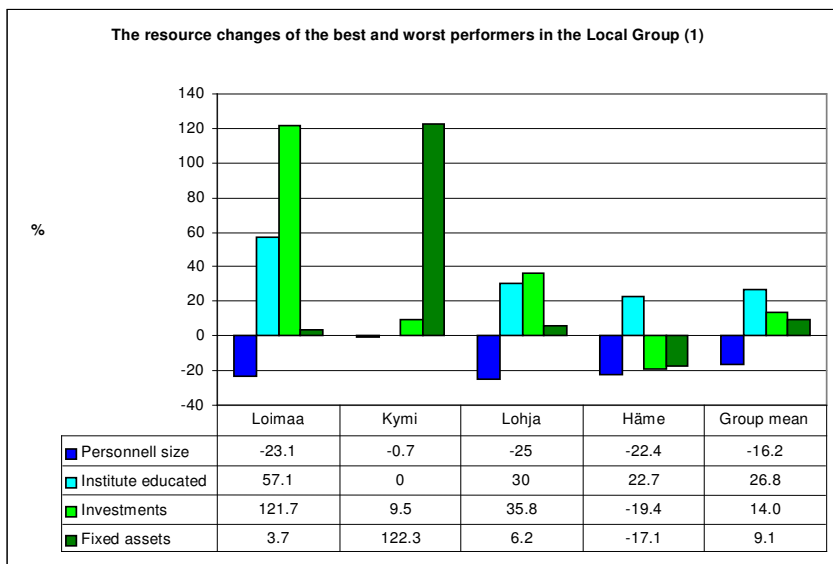
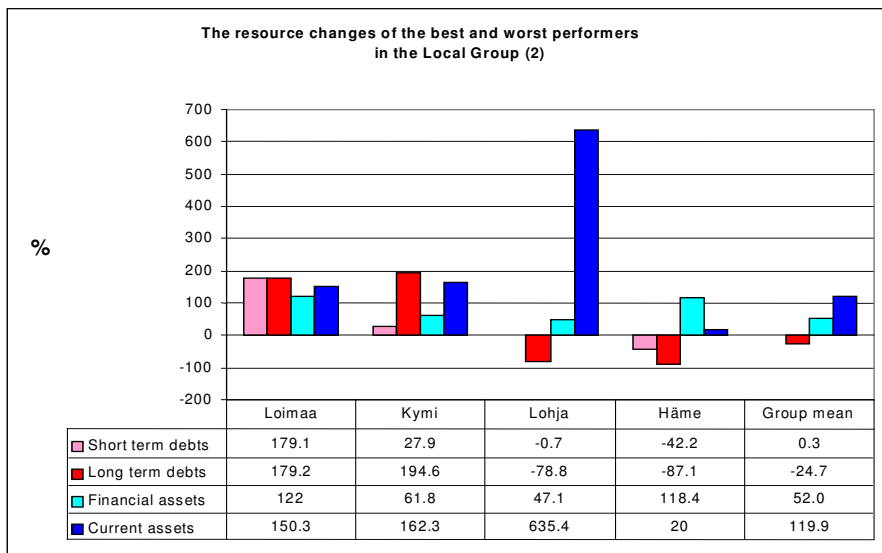


Figure 5.76 illustrates that the development of the fixed assets and investments, as a whole, differs between the best and the worst performers, too. The growth of these variables among the best performing telephone companies, remarkably exceed the strategic group mean and especially the poorest performing telephone companies of Lohja and Häme. The Häme telephone company actually had a diminishing development in these variables. Figure 5.77 shows the development of the remaining resource variables.

Figure 5.77 The Local Group's best and worst performers, the resource changes (2)



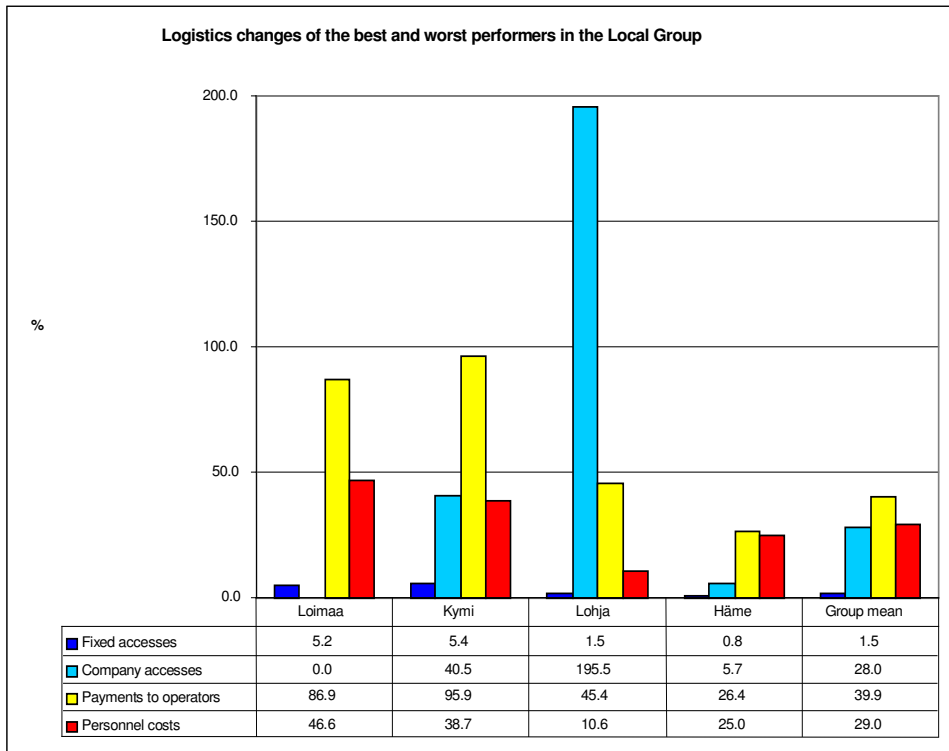
With regard to the financial and debt resources, the differences between the best and the worst performing telephone companies are evident. By excluding the development of the Lohja telephone company's current assets, the best performing Loimaa and Kymi show great growth in all variables. They increased their debts, financial and current assets more than the strategic group mean and the poor performing Lohja and Häme telephone companies. In actual fact, the poorly performing Lohja and Häme companies decreased their debts clearly more than the rest of the members in this strategic group. This affects the net capital costs, the developments of which are shown in Table 5.17.

Table 5.17 The Local Group's best and worst performers, the capital cost changes

Telephone company	Loimaa	Kymi	Lohja	Häme	Group mean
Capital cost change, %	-91,1	-101,8	-639,6	-434,7	-100,6

The worst performers, the Lohja and Häme telephone companies, diminished their capital costs considerably compared with the best performers and the mean of the Local Group. Also, Loimaa and Kymi, as the best performing telephone companies, diminished their capital costs. The rest of the logistic results with their differences in the best and the worst performers are illustrated in Figure 5.78.

Figure 5.78 The Local Group's best and worst performers, the logistics changes

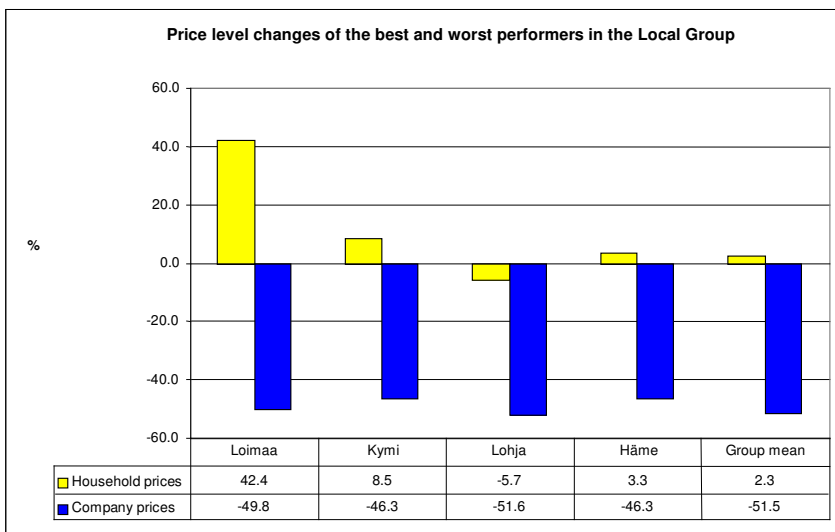


The development of the fixed-net accesses in the Loimaa and Kymi telephone companies are much faster than the comparable figures in the poor performers, and faster than the strategic group mean. It can be noticed that the Lohja telephone company significantly

increased its fixed-net company accesses.<sup>419</sup> The results clearly show that there are also great differences in the channel rents paid to the other telephone companies between the best and worst performers in the Local Group. The Loimaa and Kymi telephone companies record a much higher development compared with the poorest performers, namely the Lohja and Häme telephone companies. The different strategies can also be seen in the differences of the personnel cost development. The personnel cost growth in the Loimaa and Kymi telephone companies is faster than the development in the Lohja and Häme telephone companies.

The differences in marketing variables between the best and worst performers are akin to the differences in terms of logistics. The Loimaa and Kymi telephone companies had a higher growth in household prices than the worst performing telephone companies, or the Local Group mean. They also had smaller price reductions for companies than the Lohja and Häme telephone companies, or the price reduction strategic group mean. These results are illustrated in Figure 5.79.

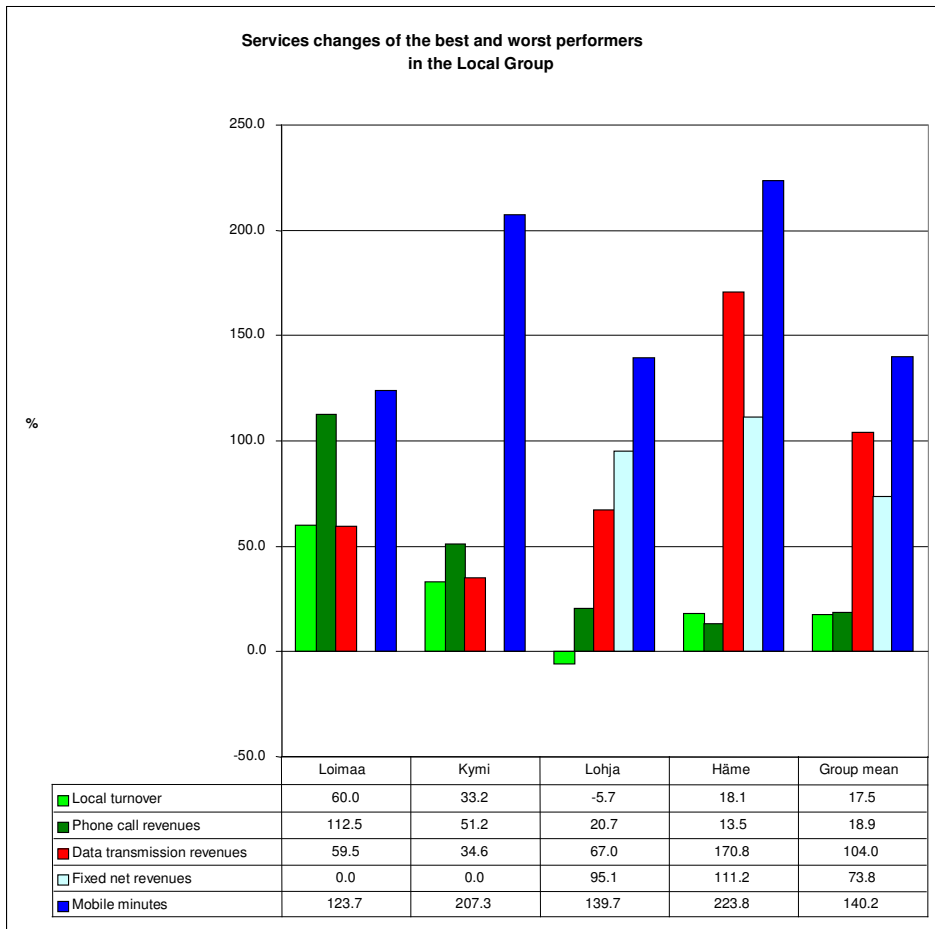
Figure 5.79 The Local Group's best and worst performers, the price changes



<sup>419</sup> The fixed-net company access numbers of Loimaa are not available.

The different marketing strategies between the best and worst performers in the Local Group can also be seen in the rest of the marketing variable development figures. This is illustrated in Figure 5.80. The Loimaa and Kymi telephone companies differ clearly from the poor performing Lohja and Häme companies and from the strategic group mean.<sup>420</sup> In the best performing telephone companies, the development of the local turnover and the total phone call revenues are on a much higher level than in the poorly performing telephone companies. Instead, the data transmission revenues developed more in the poor performing telephone companies than in the best performing telephone companies of Loimaa and Kymi.

Figure 5.80 The Local Group's best and worst performers, the service changes



<sup>420</sup> Loimaa telephone company sees its future as a telecommunications company – not just a telephone company, because companies and households are becoming smart telecommunications technology users. Talouselämä 28/1999.



The poorly performing Lohja and Häme telephone companies emphasised their services more on the fixed-net revenues than the strategic group mean. However, these results cannot be compared to the best performers in the Local Group because of the incomplete data.<sup>421</sup> Moreover, the development of the mobile call minutes does not show any systematic differences between the best and worst performers.<sup>422</sup>

As the marketing element of the strategy-performance model is discussed, it can be noted that advertising was not actively used in the Local Group, despite the high advertising growth figures: Loimaa 23%, Kymi 870%, Lohja 356%, Häme 50% and the strategic group growth mean 283%. The advertising costs are also very low for 1998.<sup>423</sup>

The main strategy and performance differences of the best and the worst performing telephone companies in the Local Group are summarised together in Table 5.18.

The results show that in the Local Group, the market potential of the poorly performing companies grew more than the potential of the best performers. The best performers increased their resources, excluding the decrease of the personnel size, which is parallel to the decrease among the poor performers. The poor performers emphasised the increase of their positive financial position. It can also be seen that the best performers increased their logistic means greater than the poor performers.

Differences can also be found in the activity level of the marketing activities and pricing decisions. The best performers succeeded to further increase their service revenues, especially regarding local and total phone calls, than the poor performers. The best performers also increased their household prices more than the poor performers, and decreased the prices for companies less than the poor performers. The strategies of the best performers resulted in an increase in turnover and profitability shares. The poor performers in the Local Group lost both turnover and profitability shares.

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<sup>421</sup> Loimaa and Kymi fixed-net figures are not available. Thus no conclusions can be drawn.

<sup>422</sup> The growth of mobile call units in Loimaa is nearly 32000 %, in Kymi 60000 %, in Lohja 44000 % and in Häme 86000 %. The strategic group growth mean is 105 %.

<sup>423</sup> The absolute figures are: Loimaa 0.01 MFIM, Kymi 0.1 MFIM, Lohja 0.01 MFIM and Häme 0.1 MFIM.

Table 5.18 The Local Group, summary of the best and the worst performer models

Differentiating features of the best and the worst performers	Local Group	
	The best performers Loimaa and Kymi	The worst performers Lohja and Häme
Environment	* Decrease or minor growth in potential	* Growth in potential
Resources	* Personnel size decrease and growth in education level	* Personnel size decrease and small growth in education level
	* Growth in physical resources	* Small growth or decrease in physical resources
	* Strong growth in external financing	* Decrease in external financing
	* Strong increase in financial and current assets	* Strong increase in financial and current assets
Logistics	* Growth in fixed-net access	* Small growth in fixed-net accesses
	* Strong growth in channel rents	* Small growth in channel rents
	* Great increase in personnel costs	* Small growth in personnel costs
	* Small decrease in capital costs	* Remarkable decrease in capital costs
Marketing	* Growth in household prices	* Small growth in household prices
	* Small decrease in company prices	* Small decrease in company prices
	* Strong growth in local revenues	* Small growth in local revenues
	* Strong growth in phone call revenues	* Small growth in phone call revenues
	n. a.	* Strong growth in fixed-net revenues
	* Strong growth in mobile phone calls	* Growth in mobile phone calls
	* Small growth in data transmission	* Growth in data transmission
	* No active advertising	* No active advertising
Performance	* Growth in turnover and profitability shares	* Decrease in turnover and profitability shares

### 5.5 Conclusions: The strategies and the performance in the strategic groups

The purpose of this chapter is to define the strategy-performance models followed in the strategic groups in the FTC during the years 1992-1998. The conclusions are based on the results in the variable value development and in the principal component analyses, which were discussed earlier in the present study and where the size of the telephone company was the clustering criteria for the strategic group grouping.

An additional effort is also made to define the changed strategy-performance directions after the de-regulative actions in the period of 1995-1998. These changed directions show differences between the strategic groups in the remarkably changed competitive environment and are due to the manager's strategy decisions. The strategy-performance

models are constructed with the help of the mobility and flexibility barrier variables in each of the strategic groups.

Finally, the strategies and performance of the best and worst performing telephone companies in each of the strategic groups will be presented. The focus is on the elements, which differentiate these individual group members from the remaining members in the strategic group especially the mental models of the company's management.

#### 5.5.1 The National Group's strategy-performance model

The discussion of the strategy-performance models begins with the strategy-performance connections followed in the National Group. Table 5.19 illustrates the main substance of the strategy-performance model during the total research period of 1992-1998. The table also shows the changes in the model during 1995-1998.

Table 5.19 shows that the important strategy emphasis in the National Group between 1992 and 1998 is widely spread in the elements of the strategy-performance model. Thus, several kinds of barriers have been constructed to protect the performance prospects. As to the traditional geographic scope, the National Group still operated on a market area where the development of the market potential is not very encouraging. However, the active implementation of the mobile call and data transmission services meant that it was able, to an increasing extent, to move outside the boundaries of locality. In this enlarged scope market of the National Group, 'customer orientation', 'reliability' and 'responsibility' were found to be the most emphasised image expectation features. The service expectations focused on the technical and functional service features.

**Table 5.19 The National Group strategy-performance model**

	The strategy-performance model 1992-1998	Change implications 1995-1998 in the strategy-performance model
Scope	Decreased or low increased market potential especially low development in general economics.	A moderate increase in potential figures.
	Image expectations: reliability, responsibility, customer orientation Service expectations: Functional and technical services	
Resources	*External financing to increase investments, fixed assets, personnel size and education.	* <i>The high investments growth is over.</i> Still, increase in fixed assets is to be seen. *The personnel size and quality grew remarkably. *The debt increase has negative effects on the solvency increase.
Logistic	* <i>A raise in the capital costs because the external financing.</i> *The growth emphasis on mobile phone and company accesses and channel rents. *The personnel amount and quality growth increase personnel costs.	*High growth in personnel size and quality increase personnel costs. *Decreasing interest in the fixed-net accesses. *High growth of the channel rents. *High growth of capital costs.
Marketing	*Price cuts favour company clients, opposite to the household price increase. *Increased total call revenues because of the market exploitation growth *Remarkable fixed-net revenue growth from channel rents, company fixed-net accesses, increased data transmission. *A change towards mobile call services opposite to the low local net increase. *Implementation of advertising means.	*Strong increase in the total call revenues *Remarkably high increase in the mobile call and data transmission services. *Price-level increase –especially for companies *The growth of fixed-net rents despite the moderate role of local net revenues. *Remarkable increase in advertising.
Internal processes	* <i>Moderate internal efficiency increase.</i>	*Low internal efficiency increase.
External processes	*High increase in the market power	*Remarkable high increase in the market power
	Image: national, projection of size emphasised Service: Technical service features emphasised	
Economic performance	*Decreased profitability share *Clearly increased turnover share	*Profitability increase *Diminishing turnover share growth.

The National Group's strategy is strongly labelled with considerable investments in fixed assets, personnel size, and educational quality. The resources are financed, for the most part, with the help of the external sources, which causes a clear increase in the capital costs. Despite the fast increases in total call revenues and total turnover, the moderate internal efficiency development shows that the National Group had not succeeded to turn the investments into good economic performance by the end of 1998.

The service prices for companies have an important role in the marketing element together with the fixed-net service revenues. As a whole the National Group greatly decreased the prices for companies during the research period, despite an increase during the years 1995-1998. The prices for households were increased.

The interest towards the company market can be seen also for example in the emphasis of the fixed-net company access increase. The fast growth of the fixed-net service revenues mainly originates from the increased number of the fixed-net company accesses, channels rents, and data transmission services. The role of the mobile call and data transmission services became significantly more important especially at the time of the latter part of the research.<sup>424</sup> This can also be seen in the high increase in advertising costs.

The external process results further indicate that the National Group answered the market image expectations by emphasising its national and resource based image features. Moreover, the service experiences of the company customers show that the technical services are emphasised in the service features. It can be argued that the National Group did not sufficiently implement the strategy from the customers' viewpoint because mostly other variables than the scope market expectations have the greatest role in the image and service profiles of this strategic group.

Table 5.19 shows that the strategy-performance patterns changed to some extent after 1994. Logistics and marketing clearly increased their role in the strategy-performance model. The high growth in personnel costs, and in the mobile call and data transmission services are the greatest changes that label the latter part of the research period. The focus is primarily on profitability, as the turnover share shows only moderate growth figures. Figure 5.81 completes strategy-performance connections through the mobility barriers, flexibility barriers, process results and economic performance in the National Group during the research period of 1992-1998.

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<sup>424</sup> The number of mobile phone accesses of individual telephone companies is not available. The high increase in mobile call volumes shows that mobile phone accesses have been the focus of logistics.



Table 5.20 The Helsinki Group's strategy-performance model

	The strategy-performance model 1992-1998	Change implications 1995-1998 in the strategy-performance model
Scope	*High market potential increase: taxes, companies and population.	*High market potential increase – especially cumulative taxes.
	Image expectations: reliability, responsibility, customer orientation Service expectations: Technical service features	
Resources	*Small increase in debts together with improved financial and current assets raise the solvency level. *Personnel resources are increased via the improved personnel education level. *High investments growth of fixed assets.	*The personnel resource development is strongly emphasised on the education level improvement *An increase in fixed assets follows high increase in investments. *The improved solvency level is due to the decreased external financing and the increase in financial and current assets.
Logistic	* The main part of the increase in fixed-net accesses is based on the increase in company accesses. *Clear decrease in capital costs due to the improved solvency level. *Small increase in the channel rents. *The general industry level increase in the personnel costs.	*The main part of the increase in fixed-net accesses is based on the increase in company accesses. *Clearly decreased capital costs due to the improved solvency level. *Small increase in the channel rents. *The general industry level increase in the personnel costs.
Marketing	*A high increase in the mobile call and the local-net revenues, in which the data transmission revenue is an element. *An increase in the fixed-net rents. *The price level is raised general, but especially company market prices. *The advertising gets a role in marketing *Average increase in total call revenues	*The growth in fixed-net revenues. *Moderate growth in total call revenues *A high increase in the mobile call services. The local-net revenue increase includes the data transmission growth. *The price level is raised generally. *The advertising amount is increased.
Internal processes	*Highly increased internal efficiency	*Highly increased internal efficiency
External processes	*Increased market power	*Remarkably increased market power
	Image: Local, projection of size emphasised Service: Technical service features emphasised	
Economic performance	*Remarkable increase in profitability *Moderate increase in turnover share	*Remarkable increase in profitability *Clear increase in turnover share

In the Helsinki Group the strategy as a whole between 1992 and 1998 is highly focused on the resource, logistics, and internal efficiency elements. Thus, the main performance protecting barriers are to be found among these areas of the model. However, the strategy-performance pattern was considerably changed during the latter part of the period.

The Helsinki Group operated on the geographical scope, where the market potential grew during the whole research period - differently to the market of the rest of the strategic

groups. The mobile call and data transmission services also moved this strategic group, with a growing extent, beyond the boundaries of the local market. The scope market image expectations of the Helsinki Group focused on the same image features as in the National Group; reliability, responsibility and customer orientation. In the service expectations, the technical features were emphasised.

The remarkable resources increase, especially in the personnel educational level and fixed assets, are financed internally to a great deal, with the help of the improved financial, current assets and turnover. The small total debt growth and improved solvency level had a profitability increasing impact through the decreased capital costs. Logistics development focused on the company-accesses growth and on decreasing the channel rents paid to other operators. It can be noted that also the mobile phone accesses grew despite the specific numbers being unavailable. This is to be concluded from the growth in the numbers of mobile phone calls.

The price level rise, especially for companies, the growth of the fixed-net rents, and the local-net revenues, as well as the mobile call and data transmission services play the most crucial roles in the marketing element of the ASP-model. Advertising also gained a clearly more emphasised role. The internal efficiency is built up by improving the utilisation of the internal resource means.

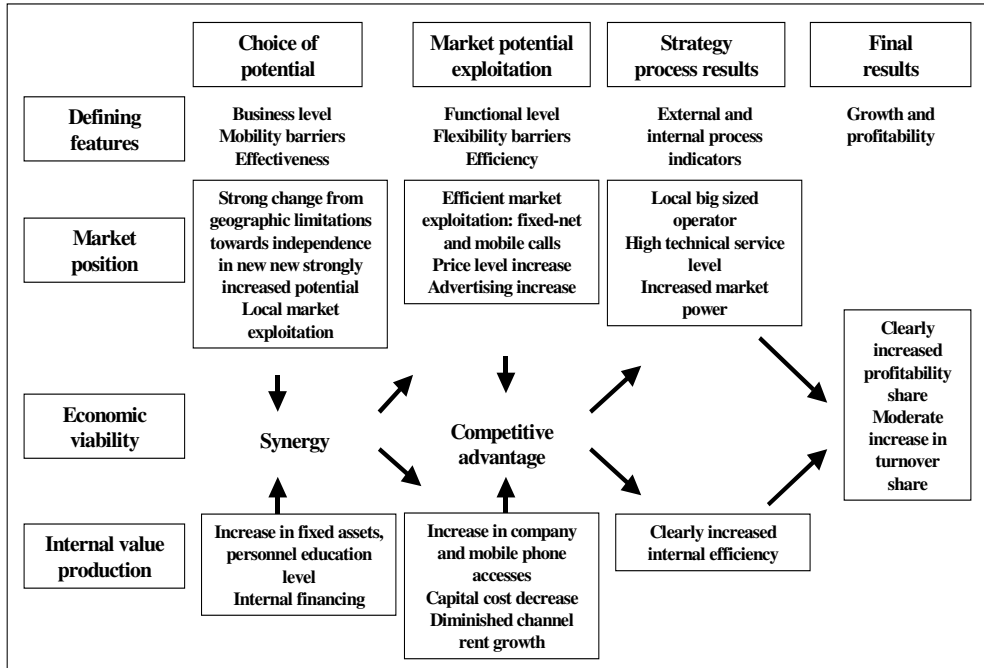
The external process indicator results show that the Helsinki Group increased its market power greatly. In the Helsinki Group there are differences in the profiles between the expected image and the realised image. With regard to the scope market image expectations, the Helsinki Group emphasised mainly 'locality' and resource based image features and the technical service features. Thus, according to the market research results, the Helsinki Group did not follow the scope market expectations profile as presented earlier, to a satisfactory level

All in all, the Helsinki Group was able to turn the realised strategy into success, especially in the remarkable rise in profitability, despite the total call revenues, which did not reach the best level among the strategic groups. Thus, the turnover share growth is moderate in comparison to the best strategic groups. Table 5.20 shows that the strategy directions are strengthened after the deregulation in 1994. Finally, Figure 5.82 illustrates the complete



strategy-performance model through the mobility barriers, flexibility barriers, and performance during 1992-1998.

Figure 5.82 The completed the Helsinki Group's strategy-performance model



The specification of the estimated Helsinki Group strategy-performance pattern shows that the mobility barriers and flexibility barriers are represented. The synergy in this strategic group has been constructed through the local market potential possibilities on the one hand, and through the strong transition to new product-market arenas and through the resource improvements (investments and personnel education), by increasing the external financing with share issue, on the other hand.

The competitive advantage is constructed further, through the new services, the increased utilisation of the fixed-net services, price level increases, and more active advertising. In logistics, new access channels and minimising payments to other operators are particularly highly valued. The strategy implementation, with the help of the increased external power and internal efficiency, resulted in growth in profitability especially, but to some extent also in turnover share.

### 5.5.3 The Regional Group's strategy-performance model

The strategy-performance results during 1992-1998 in the Regional Group are next in focus. The main results are shown in Table 5.21. In the Regional Group strategy-performance pattern the most definitive variables are located in resource, logistics, and marketing elements. The table also shows the small strategy-performance changes in 1995-1998.

The Regional Group operated on the scope market where only a small rise in population and tax figures took place. Although the number of the firms on the scope market gradually began to increase during the last part of the research period, as a whole a decrease in the number of the firms can be seen. The image expectations on the Regional Group scope market focused mainly on reliability, responsibility, customer orientation and extensive product range. On the top of service expectations, functional service quality features were often represented.

In general, the resources in the Regional Group were increased in parallel to the average FTC development rate. However, the external financing of the resource investments differs remarkably from the three other strategic groups. The resource growth is financed with a great growth in debts. This has a major influence on the decreasing solvency level of this strategic group. During the research period, the personnel size growth is clear, despite the decrease during the latter part of the research.

In logistics, the growth of the personnel size and better quality of education are visible as the personnel cost increase. The small increase in the net capital costs is partly due to the remarkable growth in the financial assets and the current assets. The Regional Group only slightly increased its total fixed-net accesses, despite the clear increase in the company fixed-net accesses. The channel rents to other telephone companies show a growth in costs.

Table 5.21 The Regional Group's strategy-performance model

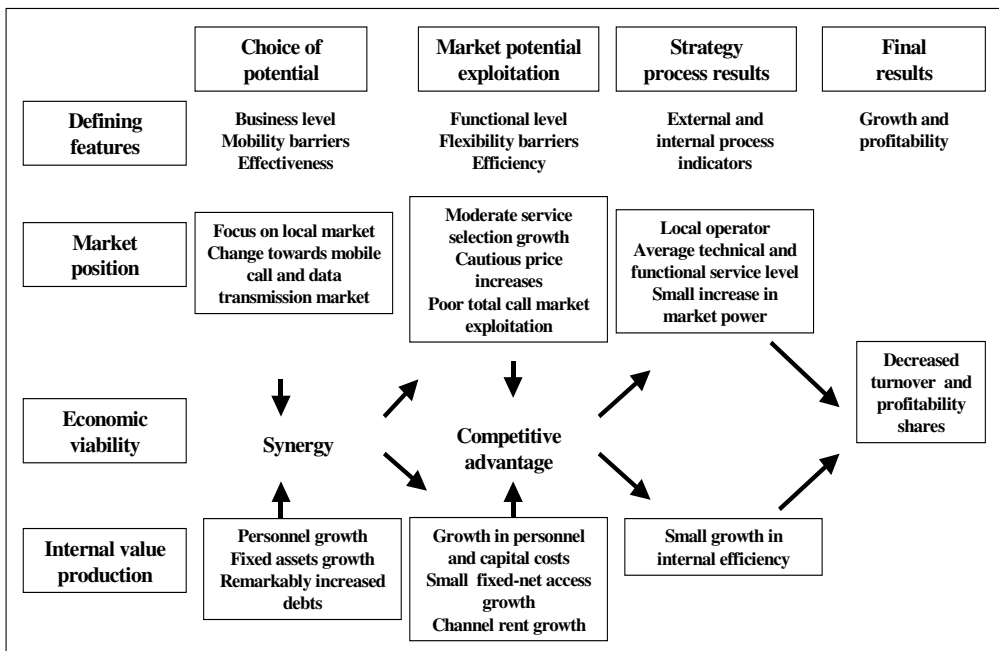
	The strategy-performance model 1992-1998	Change implications 1995-1998 in the strategy-performance model
Scope	* A small increase population and taxes, decrease in companies.	*A small potential increase in taxes, in population and companies.
	Image expectations: reliability, responsibility, customer orientation and extensive product range Service expectations: Functional and technical service features	
Resources	<i>*Resources financed with a great growth of debts, with negative effects on the solvency level.</i> * The personnel size and educational quality basement is increased. *Average industry level growth in fixed assets and small investments.	<i>*Resources financed with debt growth</i> *Personnel size is clearly diminished, but minor improvement in the education level is to be seen. *Decrease in fixed assets, but an increase in investments is to be seen.
Logistic	*An increase in personnel costs. <i>*A small decrease of net capital cost.</i> The financial and current assets growth don't compensate financing costs. *Despite an increase in company fixed-net accesses, the total fixed-net access growth is very small. *The general industry level growth in the channel rents.	* Very small personnel costs increase. *An increase in the channel rents. *Despite the growth in company fixed-net accesses, the total access increase is small. *A remarkable capital cost decrease. In addition to this the modest increase in financial and current assets have <i>effects on the solvency level.</i>
Marketing	*Small growth in local-net revenues. * Small total call revenues *An industry level increase in the mobile call, data transmission services and in fixed-net rents. *The company price level growth is small, the household prices are increased. * Advertising is not used.	*The average industry level increase in mobile call and data transmission services. *An industry level growth in fixed-net and a modest growth in local-net revenues. *A small general price level growth. *The role of advertising begins to increase * Average total call revenues.
Internal processes	*Small growth in internal efficiency	*Small increase in internal efficiency
External processes	*Small increase in market power	*Small increase in market power
	Image: Local, recommendable Service: Technical and functional service features emphasised	
Economic performance	* Decreased turnover share * Decreased profitability share	* Clear decrease in turnover share * <i>Great decrease in profitability share</i>

The marketing element in the pattern above shows that the Regional Group increased the exploitation of local-net potential possibilities only by a small extent. Among other service areas, the Regional Group reached only the general FTC growth figures. For example, total call revenue growth in this strategic group is the smallest among all the strategic groups. It was also very cautious as to the service price increases for companies and households. In addition, it is worth noting that the Regional Group hardly used advertising as a marketing mix element.

The moderate growth in most of the service areas, together with the increased personnel resulted in a very small internal efficiency growth. Similarly the growth of the market power is very small. The external process results further show that the Regional Group tried to satisfy the scope market image expectations by emphasising locality and recommendation features. According to the scope market, both technical and functional service quality features are emphasised in the service activity patterns. Altogether, the Regional Group strategies result in economic performance, in which the turnover and profitability shares are remarkably decreased. These results are the poorest in the FTC. The additional specifications in 1995-1998 show that the strategy-performance pattern is very similar compared to the strategy-performance model in 1992-1998.

Figure 5.83 illustrates the complete Regional Group strategy-performance pattern by focusing on the main results of the mobility barriers, flexibility barriers, process indicators, and economic performance during 1992-1998. The completed strategy-performance model shows that the protective mobility barriers and flexibility barriers in the model have not been especially strengthened. On the contrary, the signs show a weakening strategic position.

Figure 5.83 The completed Regional Group's strategy-performance model



The synergy level in this strategic group has been the result of the very small potential growth on the scope market and the moderate resource increase financed externally. Only personnel size was increased. It is evident that this strategic group moved gradually towards a mobile scope market. As a whole, the competitive advantage is not greatly improved. It is the result of the only average utilisation level of the new services, cautious pricing policy, the moderate growth of the fixed-net accesses, as well as the exploitation of the total call market, and the channel rent costs.

The capital cost growth creates a burden for the profitability. The positive development in internal and external process indicators is small. The economic position, that is profitability and turnover shares, worsened considerably. The total position of the Regional Group may be expressed as “stuck in the middle”, which, in strategy management, is not recommended if the group aims to gain high performance levels.<sup>425</sup>

The dynamism differences in the strategies and the performance between the best and the worst performers are evident in the strategic group frames of the Regional Group. The best performers were more active in responding to the increased potential and the mobility barrier challenges by increasing the resources more than the poor performers. They were also more capable of utilising their flexibility barriers in exploiting the market potential than the poor performers. The poor performers emphasised mostly their financial positions. As a result of the strategy followed, the economic performance of the best performers was as whole clearly better than the poor performers. Thus, the conclusion can be drawn that the individual strategic group members are managed in different ways. This stresses the importance of the managers' role in the strategy-performance processes.

#### 5.5.4 The Local Group's strategy-performance model

The strategy-performance connections in the Local Group are presented next. Table 5.22 illustrates the Local Group's strategy-performance model in 1992-1998. The model changes in 1995-1998 are presented in the same table. The table shows that the most important strategy emphases in the Local Group are in logistics, marketing, and internal processes.

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<sup>425</sup> See e.g. Dess and David, 1984.

Also the main explanatory elements in 1995-1998 after the deregulation actions in 1994 are found from the same element areas.

Table 5.22 The Local Group's strategy-performance model

	The strategy-performance model 1992-1998	Change implications 1995-1998 in the strategy-performance model
Scope	Market potential decrease in population and companies. A small increase in taxes	Small increase in company potential and taxes, A decrease in the population.
	Image expectations: reliability, responsibility, customer orientation Service expectations: Functional and technical service features	
Resources	<i>High solvency level growth</i> is due to the decrease in debts and due to the growth in the financial and current assets. Personnel size decrease, a small education level growth Moderate investments and Very small increase in fixed assets.	<i>High solvency increase</i> is due to the decrease in debts. The financial assets growth is decreased, but current assets grew clearly. Personnel size decrease, a small education level growth Small investment growth and a very small increase in the fixed assets.
Logistic	A very small growth in total fixed- net accesses and a moderate growth in the company fixed-net accesses. <i>Remarkable capital cost decrease</i> due to the improvement of the solvency. A high growth in the channel rents. A small personnel cost increase.	A very small increase in number of fixed net accesses, but a growth in the company fixed-net accesses <i>The capital cost decrease</i> diminishes. Very high increased channel rents. Increasing personnel costs.
Marketing	Small local-net turnover growth Small total call revenue increase High growth in the fixed-net and the data transmission revenues. Average growth in mobile call services. Cautious pricing: decrease in company prices, growth in household prices Advertising not used actually	Very small local-net turnover growth and a small fixed-net rent growth Small total call revenue increase Great data transmission revenue growth Average growth in the mobile call services. Cautious pricing: decrease in company and household prices A small growth in advertising,
Internal processes	High internal efficiency increase	Average internal efficiency increase
External processes	<i>Small market power increase</i>	<i>Very small market power increase</i>
	Image: Local, customer oriented, reliable, responsible Service: Mostly technical service features	
Economic performance	Minor increase in turnover share Small profitability share decrease	Minor increase in turnover share Small profitability share decrease

The Local Group operated during the research period on the local scope market, where the potential decreased or grew very moderately. The population decreased during the total research period, but in 1995-1998, a small growth in the cumulative taxes and in the number of companies took place. The image expectations on the scope market are similar compared to other strategic groups, in terms of reliability, responsibility and customer orientation. The service expectations concerned technical and functional quality features.

The strategy elements show that only financial resources increased significantly during the research period. A major part of the extra revenues was utilised to pay the debts. Thus, the greatly improved solvency level explains the decreased net capital costs. The rest of the resource categories show a decrease, or a very small growth. The personnel size decrease and the small education improvement increase the internal efficiency because the scope market offers only limited potential exploitation possibilities. The moderate investments affect the slightly increased fixed assets.

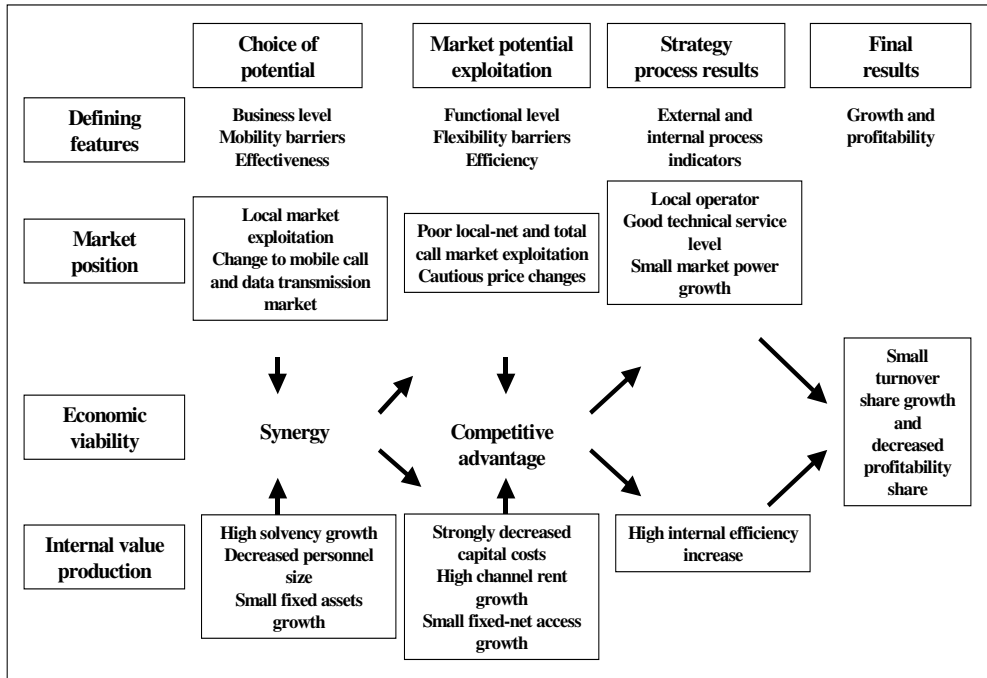
In the Local Group's logistics element, there appears to be only a slight increase in the fixed-net accesses and the personnel costs. On the other hand, a high growth in the channel rents paid to other telephone companies has negative effects on the profitability. The remarkable capital cost decrease is also typical in the Local Group.

In the marketing element, the very small local-net turnover and total call revenue growth are labelling. This is partly because of the very cautious service pricing actions during the research period. The prices for companies were decreased, and only a small increase was made regarding household prices. An increase in the fixed-net rents and data transmission revenues positively influenced the economic performance. The mobile call service revenue growth reached the average FTC level. Advertising was not used in marketing.

The internal efficiency shows a remarkably high increase, while the external process indicators show only a very small market power growth – clearly under the FTC mean. It is also to be noted that the Local Group answered the market expectations by emphasising operations that referred to the image where locality, customer orientation, reliability and responsibility play the most important role. According to the scope market, technical service quality was on the top of the realised service features.

The Local Group's strategy decisions result in an economic performance where the profitability share is decreased and in a minor growth of the turnover share. Altogether, the change implications in 1995-1998 compared to the total research period are very minor. Figure 5.84 shows the completed strategy-performance model that focuses on the mobility barriers, flexibility barriers, process indicators and performance.

Figure 5.84 The completed Local Group's strategy-performance model



The differences in the strategies and the performance ratios between the individual best and worst performers are clear within the Local Group frames. The best performers responded more actively to the mobility barrier challenges by increasing their resources more than the poor performers. They also developed their market potential exploitation to some extent more efficiently than the poor performers.

Altogether, the poor performers improved their financial positions. As a result of the strategy followed, the economic performance of the best performers was as a whole clearly better than the poor performers. These results also further support the results that show the importance of the managers' mental models as the strategy and performance patterns are explained.



### 5.5.5 Summary of the strategy-performance connection findings

In the present study the empirical strategy-performance connections were analysed from a very unique period. The deregulation replaced the monopoly environment with new competition possibilities in the FTC. It was therefore to be expected that the strategic behaviour and the performance of the various strategic groups and the individual telephone companies would be challenged. Indeed, the strategy-performance models presented earlier actually demonstrate remarkable differences between the various strategic groups. Each of the strategic groups has confronted the new competitive environment differently and constructed as a collective action different kinds of mobility and flexibility barriers to sustain the competitive position. The models also resulted in the different economic performance configurations. The strategic group specific change implications in the results from the years 1995-1998, add further weight to this argument. Parallel variations can be seen inside the strategic group frames. The strategic group member companies developed their strategies individually based on the various managerial ambitions. This is evident especially in the differences between the best and worst performers inside the strategic groups.

The telephone company size as the clustering criteria for the strategic group formation shows its validity throughout the empirical results especially in this capital intensive industry. Each of the four different sized strategic groups followed strategy core dimensions, which differentiate it from the other strategic groups, and which yield different economic performance. The geographical operation market areas of these strategic groups fit well logically with the grouping criteria and strengthen the reliability of the empirical research results. The strategic groups with big sized members operated on a national basis or in the cities, while the strategic groups with small sized members operated in the rural areas where the market potential is small. However, the new mobile products and deregulation diminished the previous role of the geographic locality aspects as the only scope market.

In addition to the geographical location aspects, other differences between the strategic group scope markets also exist. Excluding the National Group, the potential of the strategic groups with bigger sized members grew more than the comparable market potential of the strategic groups with smaller sized telephone companies. Because the operation area of the

National Group covers the whole of Finland, the target potential development follows nearly the same lines that can be seen generally in Finland. The image expectations on all the strategic group scope markets are rather similar. The service quality expectations, however, differ to some extent between the strategic group markets. In the Helsinki Group, expectations are emphasised most on the technical service quality.

The resource results show that the bigger the strategic group member companies are in size, the more the companies have invested in personnel, physical resources, and external financing. Respectively the smaller the strategic group member companies are in size, the more the companies have improved their financial resources. The Regional Group debt growth in is an exception to these generalisations.

In the strategy-performance model, the logistics development figures between the strategic groups also differ. It can be seen from the results that the bigger sized members the strategic group includes, the more the member companies have emphasised acquiring fixed-net accesses, increasing personnel preparedness, and increasing the capital costs. Excluding the National Group, the smaller sized members that the strategic group includes, the more the member companies have increased the channel rents paid to other telephone companies.

In marketing, it is typical that the strategic group with bigger sized members increased their price levels more than the strategic groups with small sized members, which also earned less through their local-net services.<sup>426</sup> The mobile call and data transmission services have higher development figures in the strategic groups with small sized members, because the starting point was on a low level in the beginning of the research period.<sup>427</sup>

Although all the strategic groups became closer to each other, internal efficiency was the better the smaller the members that the strategic group included - excluding the Regional Group, which was almost in the same low internal efficiency category with the National Group. Contrary to internal efficiency development, the results show that the bigger sized members the strategic group included, the more it increased its external market power. The external process results further show that the National Group is labelled as a national

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<sup>426</sup> It is to be noticed that the price level -baskets

<sup>427</sup> E.g. Noda and Collis, 2001 have found out that the telephone companies differed most in pricing, marketing and distribution.

operator, while the other strategic groups have a strong local image. The service quality is not considered to be on a very high level according to the scope market. All the strategic groups focused mostly on the technical service quality. The market potential expected more functional oriented service quality.

Finally, the economic performance results show that the bigger the members that the strategic group included, the faster the turnover share growth was. The profitability share development varied individually among the strategic groups.<sup>428</sup> The Helsinki Group was the only one to increase its profitability share. In addition, the results show that there are also differences between the members in the strategic groups. These results are in parallel to the findings of Lawless and Tegarden, who argue that performance differences are significant among the strategic groups in conforming industries where high concentration, high entry barriers and low differentiation prevail.<sup>429</sup>

The next figures complete the empirical conclusions by showing the strategic group strategy and performance positions in the new competitive environment. The best and the worst performers in the Regional Group and the Local Group are also included. The presentation begins with Figure 5.85, which illustrates the strategic groups on the mobility and flexibility barrier axes. The figure is constructed from the basis of the empirical strategy-performance model results presented earlier in the present study. The financial resources are not included and the interpretations are intended to give only a guiding approach.<sup>430</sup>

The place on the mobility barrier axes shows how effectively the single strategic group has changed its strategy according to the new deregulated competitive environment possibilities. Accordingly, the place of the strategic group on the flexibility barrier illustrates the market exploitation efficiency. The figure shows that the National Group has changed its strategy significantly according to the new possibilities and in this respect is a leading company in the FTC.<sup>431</sup> However, the implementation of the new strategy has not reached a very efficient level.

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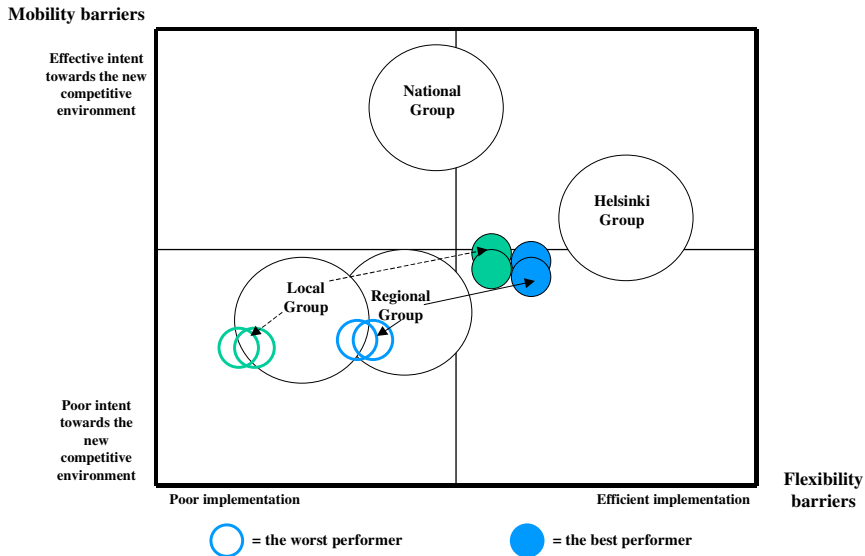
<sup>428</sup> Staranczak et. al., 1994 argue that output growth increased productivity in the Telecommunications Industry in some OECD countries.

<sup>429</sup> Lawless and Tegarden, 1991.

<sup>430</sup> The revenues gained by selling the Radiolinja shares have a strong biasing effect.

<sup>431</sup> See Fiegenbaum Avi, and Thomas 1995, p. 472.

Figure 5.85 Illustrative positioning of the strategic groups on the mobility and flexibility barriers axes



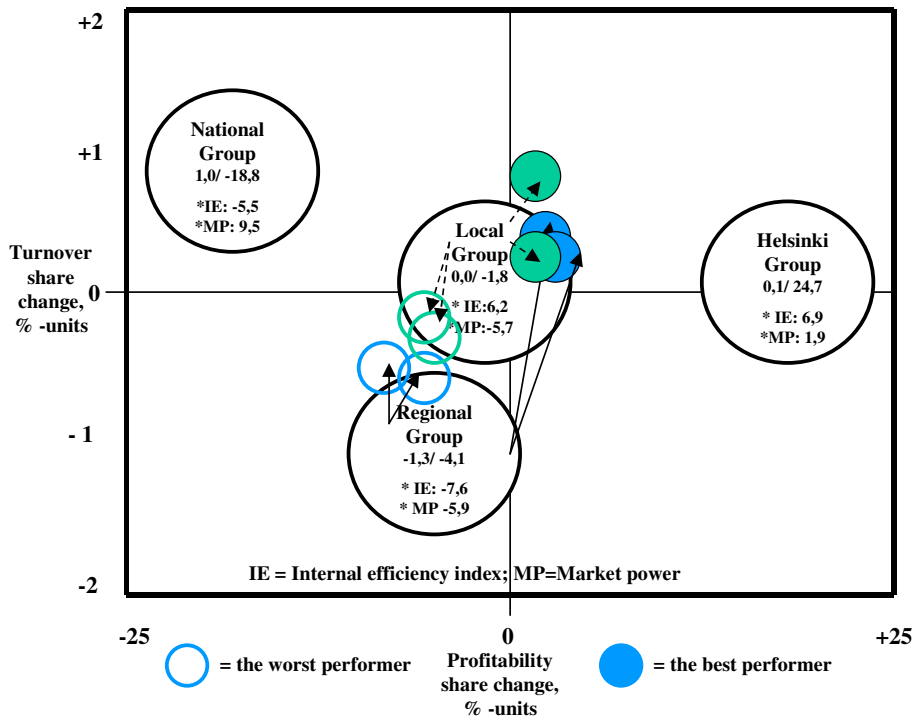
The Helsinki Group changed its strategy almost as much as the National Group. The implementation is also on a good level. The two remaining strategic groups changed their strategies towards the new possibilities, but to a smaller extent compared with the strategic groups including big sized telephone companies. The best performers in the Regional Group and the Local Group reached a better implementation level than the strategic group in average. The worst performers in both strategic groups also have poor flexibility. This result supports the findings of Nair and Filer as well Lahti, who all argue that some firms behave differently than the core of the strategic group.<sup>432</sup> Also, Noda and Collis found that some regional companies had a corporate strategy for new cellular business and some companies moved very steadily towards this new business in the telecommunications industry.<sup>433</sup>

<sup>432</sup> Nair and Filer, 2003; Lahti, 1983a.

<sup>433</sup> Noda and Collis, 2001

The strategy choices and the market exploitation influence the economic performance of the strategic groups and the telephone companies. Figure 5.86 illustrates the position of the strategic groups on the turnover and profitability share change axes.

Figure 5.86. Illustrative positioning of the strategic groups on the turnover and profitability share axes



The National Group has recorded a great change in the turnover share. Respectively, the profitability share in the FTC decreased remarkably. The Helsinki Group increased its turnover share moderately, but greatly increased the profitability share. The Local Group nearly sustained its total position with regard to the turnover and performance shares. The Regional Group, as a whole, lost its positions in both dimensions. Figure 5.86 further illustrates that the best performers in the Regional Group and the Local Group perform better than the strategic group they belong to. In addition, the poor performers are close to the level of the total strategic group profitability share change.<sup>434</sup>

<sup>434</sup> McNamara, Deephouse and Luce, 2003, have found that secondary firms in strategic groups had better financial performance than core firms in their strategic group.

## **IV DISCUSSION**

### **6. IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This dissertation is a continuation of strategy management research. The main task was to produce new theoretical and empirical knowledge concerning the strategy-performance connections of the firm.

In the present study, there are three main theoretical objectives. First, the present study aims to show the advantages which can be reached by combining the statements of the tradition which prefers the whole industry as the most relevant strategy-performance research starting point and those of the tradition which prefers the individual firm as the most interesting strategy-performance research focus. Second, the present study aims to develop the concept of resource based barriers of the firm. Third, the development of the elements and the totality of the strategy-performance models are focussed on in the current research.

The empirical object was to show the relevancy and usefulness of the three theoretical advanced results mentioned above in strategic managerial practice. This task of the study was performed among The Finnish Telephone Companies (FTC), which includes different sized firms and which has confronted remarkable competitive environment changes, especially between 1992 and 1998. These have ranged from geographical aspects to independence of geography and from monopoly to oligopolistic competition.

#### **6.1 Theoretical implications supported by the empirical results in the FTC**

As stated in chapter one, the research problem was: "What are the critical strategy and performance elements of the strategic groups among Finnish Telephone Companies in the changing competitive environment?" Furthermore this problem was divided into five explicit research tasks: (1) Construction of the model, which identifies the ex ante strategy and economic performance elements of the firm, (2) Identification of the strategic groups among Finnish telephone companies. (3) Reconstruction of the strategies followed by the various strategic groups during the unique deregulation period between 1992 and 1998. (4) Identification of the performance model which explains the

performance resulting from the strategies followed in the strategic groups. (5) Identification of the main strategy and performance differences between the best and worst performing telephone companies in each strategic group.

The earlier strategy management traditions include somewhat unclear explanation concepts with limited perspectives and shortages in strategy-performance definitions, which are even to some extent conflicting. In order to contribute to the strategy management theory, the implications of the present study fall into four categories within the research problem presented in the introduction. As a result, the present study (1) combines Strategic Group discipline (SG-discipline) and Business Policy (BP) tradition views, (2) introduces the new highly relevant concept of the flexibility barrier in the context of the SG-discipline, and as such re-defines the roles for strategic effectiveness and efficiency, (3) justifies the necessary extended role of the strategy implementation process results, and finally (4) introduces the holistic Advanced Strategy-Performance model (ASP-model).

#### Combining SG and BP perspectives

The strategy management literature presents various traditions to be followed as the performance of the firm is explained by their strategies. The literature suggests avoiding research approaches which just speak in favour of their own viewpoint and may ignore relevant aspects. Thus, for the benefit of the holistic approach, the present study combines two research approaches in the oligopolistic market: the industry structure view of the SG-discipline, which is an enlargement of the Industrial Organisation Economics tradition (IO), and the BP firm-based view.

IO argues, for instance, that industry as a whole and the size of firms determine the strategic behaviour and performance of individual firms. As such, IO bypasses the relevant differences in the competitive environment of the individual firms inside an industry and ignores managers' crucial role in strategy making. However, the SG-discipline argues that the strategic group, as an intermediate level between the industry and the individual firms, is the most relevant competitive context of the firm. Because the strategic group members confront similar scope market features, competitors, and resource exploitation possibilities, the firms within the specific strategic group have similar strategic behaviour pattern and performance dimensions compared to each other, which are different from the behaviour

and performance of the firms in other strategic groups. Thus, the strategic group scope and resource dimensions offer more appropriate analysis perspectives than the industry as a whole.

The SG-discipline has presented several strategic group clustering criteria. Many of them focus on only one specific strategy-performance element, such as scope, resources, or market exploitation variables. The strategy of the firm is, however, a multidimensional issue. Thus, a holistic clustering approach is more appropriate to be applied in strategy management empirical studies. The most reasonable way to identify the strategic groups is to cluster the firms according to size, because the size of a firm is a proxy measure of its total resources. The resources are the best way to reflect the synergy and competitive advantage creating possibilities of the firm.

The FTC was the empirical research object of the present study. The heterogeneity between telephone companies in the total industry level analyses did not show reasonable strategy-performance connections. It became, however, evident along the suggestions of SG-discipline that the competitive environment and the strategic behaviour as well as the economic performance varied remarkably between the strategic groups based on the size of the telephone company. The scope and the resources alignment clearly suggest that the most relevant clustering criterion is the size of the telephone company.

In the FTC, four strategic groups were identified: the National Group that consists of only one very large telephone company; the Helsinki Group, which includes one large-sized member as well; the Regional Group of nine middle-sized companies; and the Local Group of 35 small telephone companies. The size criterion covers logically also the geographical perspective, although de-regulation removed part of this aspect.<sup>435</sup> The strategic groups with large-sized companies operated in a market where the potential was remarkably larger than that of the strategic groups with small-sized companies. For example, the National Group operates on a national basis, while the Local Group operates in geographically limited rural areas. The empirical findings in the FTC show that the strategic groups also have a relevant role as managers' conceptualisation reference points. No transitions of strategic group members were found among the telephone companies during the years 1992-1998. Thus,

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<sup>435</sup> See e.g. McGee and Thomas, 1992 p. 79; Gordon and Milne, 1999.



strategic group membership permanency is clearly supported by the empirical results in the FTC.<sup>436</sup>

According to the SG-discipline, one strategic group is usually at the head of industry evolution. The empirical findings of the present study clearly showed that the strategic groups in the FTC prepared themselves differently for the transition from monopoly to the new oligopolistic environment. The National Group and the Helsinki Group, with their large-sized companies, changed their strategies more rapidly for the new market opportunities than the Regional Group and the Local Group with their small-sized companies. The new strategy barriers were not limited by geographical boundaries, but called for a remarkable resource increase in synergy creating. The strategic groups including large companies strengthened such barriers, which refer to the size, personnel quality and investments. However, the strategic groups including small sized companies maintained their financial position by decreasing their debts and personnel before increasing other resources, such as investments and fixed assets. The local-net revenues also played an important role. Despite the strategic groups in the FTC increasing mobile and data transmission services, it is evident that the National Group was the leader in the FTC evolution between 1992 and 1998.

The Regional Group focused mainly on the local market, but at the same time moved towards the mobile market and, as such, was “stuck in the middle” between the previous and new strategy. It increased its total resources by increasing significantly the debts. Conversely, the Local Group with its small-sized telephone companies focused on market potential, which was limited to the earlier specific geographical market perspective. These empirical conclusions support the earlier strategy management findings, which state that the strategic evolution of firms differs because of the dependency on such determinants as previous resources, culture, and managers’ mental models.<sup>437</sup>

The image and service expectations of the scope market were rather similar between the strategic groups. This is probably due to the earlier area monopoly environment, where differentiation was not an important determinant in the performance of a firm. Reliability, responsibility, customer orientation and technology were emphasised in the image

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<sup>436</sup> McGee and Thomas, 1992. Fiegenbaum and Thomas 1995, p. 472. Noda and Collis, 2001.

expectations. However, the service expectations differ to some extent between the strategic groups' market. In the Helsinki Group, the technical services expectation features were emphasised. In the other strategic groups, the functional service features got a greater role.

As MacGee et al. note, the strategic groups are the starting points, not the end of the strategy research.<sup>437</sup> The SG-discipline alone cannot explain the economic performance of a firm by strategy followed. With regard to the combination of SG-discipline and BP tradition, BP is interested in why some individual firms perform better than other firms within an industry. BP focuses, from the firm perspective, on the alignment of the competitive environment and the resource allocation, which is discussed in the Resource Based View tradition (RBV). BP also strongly highlights the managers' relevant role in decision making. Thus, in the present study, BP aspects were combined with an SG-discipline approach, which enables the relevant industry structure to be covered as well as the individual firm scope and resource factors influencing the business and functional level strategies and the economic performance of the firm. The empirical findings among the best and worst performing telephone companies strongly support the relevancy of this combination.<sup>439</sup>

The empirical results show that although the strategic group members in the FTC have a similar strategic behaviour and performance dimensions, differences can also be found between the best and worst performing telephone companies within each strategic group. In the Regional Group, with the exception of financial resources, the best performing telephone companies strengthened their resources. Conversely, the worst performing group members had, excluding a strong growth in financial resources, a very cautious resource increase. The market potential of the best performers decreased or showed only a minor growth. Similarly in the Local Group, excluding financial resources, the resource growth of the best performers was systematically on a higher level compared to the worst performers. This is despite the fact that the market potential grew less among the best performers than among the worst performers in the Local Group. It can therefore be concluded that strategic group evolution leaders also exist within the strategic groups.

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<sup>437</sup> See Oliver 1997, p 702. Managers' mental models are added here by the author of the present study.

<sup>438</sup> McGee, Thomas and Pruett, 1995, p.264.

<sup>439</sup> See also the industry evolution statements presented by Lahti, 1983.

### Introduction of a new relevant resource-based barrier

To contribute further, a new crucial resource-based barrier was introduced in the present study. The SG-discipline argues that firms construct resource-based mechanisms around the industry (entry and exit barriers) and around the strategic groups (mobility barriers). Entry barriers protect firms from competition coming from outside the industry and mobility barriers from competition from other strategic groups within the industry. The SG-discipline also argues that firms within the same strategic group have similar main key scope and resource dimensions, which means keen competition especially between group members. The SG-discipline has not, however, explained how the firms protect themselves from the competition prevailing inside the strategic group. Thus, the present study has introduced a relevant resource based barrier in order to complete the strategy-performance connection explanation. The new barrier is called the *flexibility barrier*.

As the firms try to gain competitive advantage to exploit the market potential, they actually construct firm specific protective mechanisms. Indeed, the flexibility barrier refers to the firm's specific functional level strategy implementation ability within the strategic group and existing resource frames. Marketing and logistics finally protect the group member against the competition coming from firms within the same strategic group. Some firms can simply exploit the market potential better in comparison to other firms with similar market and resources. Moreover, the role of manager mental models becomes crucial in the flexibility barrier construction. Thus, the flexibility barriers have a most important role in completing the explanation of the strategy and performance differences between the strategic groups and the individual firms.

The flexibility barrier revises the earlier ambiguous roles of the effectiveness and efficiency of the firm presented in the strategy management literature to a great extent. According to the strategy management literature the effectiveness of the firm refers to external strategic aspects, which are concerned with the selection of scope and interaction with the market. However, an opposing argument states that the definition of the external potential and internal resource choices leads to strategic synergy, that is effectiveness. Similarly, the efficiency has been defined on the one hand as the target of the internal resource selection and logistics actions. On the other hand, efficiency has been connected to internal operative logistics and external marketing activities. However, the resource decisions of the firm, for

example, deal with external as well as internal matters depending on the decision perspective, and may belong to either strategic or operative decisions.

In the present study, the re-defined conceptual roles of the effectiveness and efficiency of the firm get a clear interpretation in relation to the mobility and the flexibility barriers. The effectiveness is connected with the strategic dimensions, that is the main strategic intent, which frame the synergy possibilities through scope and resource alignment. Through effectiveness the managers actually define the mobility barriers, within which the firm will operate. Similarly, the efficiency of the firm is connected to the external and internal operative activities, which define the market exploiting possibilities and the building of flexibility barriers along the strategic intent of the firm. The mobility and flexibility barriers also reflect industry evolution.<sup>440</sup>

The empirical results in the FTC speak strongly in favour of the new flexibility barrier concept. The flexibility barrier findings show clear differences between the strategic groups and between the best and worst performers within the strategic group. The National Group and the Helsinki Group clearly increased their logistics power, such as accesses and personnel costs, to a greater extent than the strategic groups of smaller sized companies. A similar development can also be seen in marketing. The strategic groups which included large companies exploited market efficiently through mobile call and fixed-net services as well as with price changes. These strategic groups and the National Group especially also increased their advertising to a great extent.

The Local Group flexibility barriers show remarkably decreased capital costs, but at the same time moderate growth in fixed-net accesses, high growth in channel rents paid, poor market exploitation, and cautious price changes. The flexibility barriers in the Regional Group show only a small growth in fixed-net accesses, but a high increase in channel rents paid and in personnel and capital costs. The changes in market exploitation and prices were moderate during the research period. The Local Group and the Regional Group had hardly any advertising costs at all. The results of the best and worst performing telephone companies inside the strategic groups further support the conceptual use of flexibility barriers.

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<sup>440</sup> See Lahti 1983a; McGee, Thomas, Pruett, 1995.

In the Regional Group, a strong marketing and logistics growth can be seen among the best performers. The price level growth was faster than among the worst performers, which decreased the service prices for companies. The flexibility barrier development emphasis of the worst performers was mainly on the capital cost decrease. The worst performers had poor market exploitation results in marketing. A similar tendency can be witnessed in logistics and marketing. In the Local Group, the logistics and marketing growth of the best performers is systematically on a higher level than that of the worst performers. However, among the poor performing telephone companies a strong growth in fixed-net revenues can be seen.

#### Extension the performance perspective

In the strategy management literature, economic performance is highlighted as the final result of the strategy, but the external and internal strategy implementation process results may have gained too minor a role in the strategy-performance models. The results connected with realised image and services quality features of the firm on the scope market have particularly been missing in the SG-discipline context, although mobility and flexibility barriers are strongly associated with preferences on the market.<sup>441</sup> Neither has the measuring of the strategic preparedness of the personnel of the firm had a sufficient role, although personnel are crucial especially in the final strategy implementation.

In the present study, the external and internal process elements are specified as preceding performance stages before the final economic performance of the firm. In addition to the economy based figures, the exploration of the realised image and service results was involved in enlarging the understanding of the differences between the strategic groups. The relevancy of these perspectives is strongly supported by the empirical findings, which showed that strategic groups which included large telephone companies focused on external process results and turnover share increase. Strategic groups of small-sized companies focused on the increase of internal efficiency processes.

The National Group had a remarkable growth in market power in the external strategy process. With regard to image, size and technology were emphasised on a national basis.

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<sup>441</sup> See e.g. Galbraith, Merrill and Morgan, 1994, p. 614.

The Helsinki Group increased its market power and stressed technical service quality in addition to its local large operator image. Conversely, the increase in the market power of the Regional Group was small and the image of this strategic group was labelled by locality. The service quality was not at a sufficiently high level. Finally, the Local Group had a small increase in market power, local image and emphasised technical service quality. None of the strategic groups reached a good service level. In addition, the economy based results of the internal processes in the National Group and the Regional Group were moderate. The Helsinki Group and the Local Group clearly increased their internal efficiency.

In the present study, the internal research was carried out to learn how prepared personnel were to carry out the strategy intended by the managers. Although only one strategic group participated in this research, much can be learned from the research results. The main strategy implementation results show that the profile of the managers is to some extent rather systematically different compared to the profile of the employees. Most often the managers' answers give a more positive impression of the strategy implementation. As a whole the results reach only a moderate success quality level. The telephone company image evaluation results of the managers and employees are quite similar and at a rather high level. Despite the clear differences between the managers and employees, both of the respondent groups agree that the service quality level has not been very good.

The SG-discipline argues that mobility barriers cause performance configuration differences between the strategic groups. The empirical findings in the FTC show clearly that in addition to the mobility barriers also the flexibility barriers have an important differentiating role in economic performance between the strategic groups and between the individual group members. The National Group increased its turnover share remarkably, but lost its profitability share. The Helsinki Group had a growth both in profitability share and turnover share. In the Regional Group, both of these shares diminished. In the Local Group, a small turnover share growth exists, together with a decreased profitability share.

Despite the strategic group members within each strategic group following similar main performance dimensions, each of them perform differently to some extent.<sup>442</sup> The

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<sup>442</sup> E.g. Nath and Gruca, 1997: p.758.

advantages of combining BP and SG-discipline are especially evident in the results of the best and worst performers in the strategic groups. The performance differences between the firms have their roots in the strategy and operational decisions made by the managers through their mental models. Actually, the strategy implementation activities, the flexibility barriers, create the final differentiating protective. The empirical results in the Regional Group and the Local Group show that the best performers performed better in turnover and profitability than the worst performers, who lost their positions in both of these aspects.

#### Advanced strategy performance model

Finally, the present study introduces a holistic ASP model. According to the recommendations of the strategy management literature, the scope, resource and performance elements should be included in the strategy-performance model of the firm. Later, Lahti extended the basic model construction towards a more holistic and dynamic view of the strategic and operational decision levels of the firm. The extended model clearly serves the managers' strategy tasks better than the earlier models, although the individual model variables can not show the straight strategy-performance connections. However, the model elements, the substance and the chain of logic of the frame model are thoroughly validated by the strategy-management literature. This construction was used as the frame model in the present study in the developing of the ASP model.

Although the frame model has been under active development work, it still includes further development possibilities with regard to the individual elements. Despite the fact the frame model has been applied in several occasions in strategy-management studies, it has not been efficiently connected to the mobility and flexibility barrier concepts in the SG-discipline context.

The redefined interpretation of effectiveness and efficiency, and the introduction of the resource-based flexibility barrier, presented in the current study, contributes to the theoretical strategy- performance connection explanation by positioning these elements into the ASP model in the SG-discipline context. The ASP-model also includes the extended process result perspective in the performance of the firm as indicated earlier in Figures 2.6 and 2.7. The contributions clarify the role of managerial strategy work on corporate, business and functional levels remarkably, as indicated earlier in Table 2.2.

The empirical results in the FTC strongly support all the contributions suggested by the ASP- model. The strategy-performance model differences are evident and logical between the four strategic groups and between the best and worst performing group members. The strategic group specific models are discussed in detail earlier in the present study and shown in Figures 5.81, 5.82, 5.83 and 5.84.

### Final remarks

The research problem of the present study was: “What are the critical strategy and performance elements of the strategic groups in FTC?” The main problem actually included several complex theoretical and empirical dimensions. This is why no single response can answer the main research problem, and why the answers have been discussed in detail in chapter 5. Four strategic groups were identified through the size of the group member telephone companies, which supports the earlier SG-discipline findings. The ASP-model, which was constructed in the theoretical part, showed its empirical power to identify the critical strategy and performance models of the strategic groups in FTC. Finally, the main strategy and performance differences between the best and worst performers within each strategic group were identified.

## 6.2 Implications for managerial practice

The earlier strategy management theory and its theoretical implications above show that a holistic multidimensional approach is needed to understand the strategy-performance connections of the firm. The present study also provides the managers with several implications for their strategy task in practice.

First, managers should make efforts to recognise the relevant strategic group they belong to, as they try to allocate the resources of the firm in the competitive environment in the best possible way. By following the recommendations of the SG-discipline, the market potential definition, the competition, the competitor evaluation and strategic decisions are significantly improved when compared to the previous position of only focussing on the total industry.



Second, managers should simultaneously evaluate their strategy choices against the mobility barriers (effectiveness), and their strategy implementation against the flexibility barriers (efficiency). This is because these two perspectives together lead to the economic performance goals of the firm, as indicated in Tables 2.1 and 2.2. The evaluations should cover the needs and expectations of the market and all interest groups of the firm - especially personnel, who will be implementing the intended strategy. This is to make sure that the managers have the same strategic picture of the choices and implementation bases as the scope market and the rest of the interest groups involved in the strategy of the firm. The opinions of the scope market and the interest groups should be a strong factor as the strategy is planned and the success of the strategy implementation is measured.

Third, managers should be aware of the mobility barrier effectiveness and flexibility barrier efficiency of the competing firms – especially those in the same strategic group. This is because the core of the competition lies on the market position of the firm – not just on absolute performance achievements. The final performance success or failure of the firm is finally relevant to be measured in proposition to competition and market features. Actually, it is very rewarding for managers to learn more about flexibility barriers and the performance of the best and worst performing competitors in the same strategic group. In general, managers should focus on the mobility and flexibility barriers of the strategic groups as well as the barrier constructions of the best and worst performers, in order to be prepared for the possible strategic group membership change of their firm. Competing firms may also change their strategic group within the industry.

Fourth, it is not just competition inside the industry that matters.<sup>443</sup> The competitive changes may also have their sources outside the industry and possible entries confront the strategic groups of the industry differently. All changes in the competitive environment re-define the constructs of the mobility and flexibility barriers.<sup>444</sup> Thus, managers may need re-defined strategy decisions to ensure that the firm-specific mobility and flexibility barriers of their firm are competitively powerful in the changed competitive environment.

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<sup>443</sup> See e.g. Porter 1980, p. 4.

<sup>444</sup> Thomas and Gardner 1985 p. 270, argue that firms adapt their powers and weaknesses according to the competition. Williamson 1986 p. 216, suggests that competitive changes in strategic groups are caused by the changes of individual firms.

Fifth, the multidimensional nature of firm strategy is difficult to handle without a good strategy-performance model, which can also be applied in practice. Thus, as managers try to develop the performance possibilities of the firm, they ought to devote more effort to utilising strategy-performance models. The ASP-model presented in the present study is strongly recommended, because this strategy tool has a holistic approach to the strategy-performance connections of the firm. It gives convenient guidance to managers in their demanding strategy task, that is in sketching their competitive environment, resources, logistics and marketing processes – and even industry evolution.

Finally, because managers with their individual mental models are the most important strategy guides, firms should empower their managers to develop their mental models within the changing competitive environment. They should learn more about the existing mechanisms and dynamism of strategic groups within the industry – but most of all learn to withdraw from them whenever the competitive environment is about to change. Furthermore, firms should hire managers who are professionally capable of taking control over the development of business synergy creating strategies, as well as developing competitive advantage creating processes in co-operation with personnel.

### 6.3 Suggestions for future research

It is suggested that future research is focussed on two different aspects: (1) the development of the expanded utility of the ASP-model and (2) the role of managers' mental models in a strategy-performance decision context.

First, the present study applied the ASP-model within one industry. To get more support for the strategy-performance explanation power of the model, several industries ought to be involved. It is suggested that these industries are selected from among the service and production industries, and should be in different stages of their industry evolution - new, mature and vanishing industries, for example. The research focus should be on the mobility and flexibility barriers as well on the process and economic performance of the firm. It can be asked, for example, whether the expectations of the scope market have been fulfilled and whether personnel are really involved in the strategic intent and how these issues affect the performance of the firm. The external and internal process results of the present study

suggest that more focus on the synergy and competitive advantage viewpoints prevailing in the scope market and among managers and personnel of the firm should be emphasised in strategy-performance studies.

Second, the current study emphasises the managers' crucial role in the strategy of the firm. It is the managers who, through their strategic decisions, guide the firm towards the performance goals on corporate, business, and functional strategy levels. Several questions therefore arise on the issue as to what intellectual foundation managers base mobility barrier (effectiveness) and flexibility barrier (efficiency) decisions on. For example, what are their strategic reference points as to market potential, competitive environment, resource acquisition and allocation? What are the core similarities between managers' mental models within strategic groups as to mobility barriers and flexibility barriers? What are the differences between managers' mental maps in different strategic groups? Furthermore, what are the differences concerning mobility and flexibility barriers in mental models, between the best and worst performing firms within the same strategic group? It is therefore suggested that additional research focus should be directed on exploring managers' mental mobility and flexibility barrier models as the performance of the firm is explained by the strategy followed.

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#### Interviews in alphabetical order between 1996 and 2004

Artte Ulla	CEO, Finnet Focus Ltd.	1997-2003
Hara Veikko	Research Director, Sonera Ltd	1997-1999
Harmia Henri	Development Manager, Sonera Ltd	1997
Helenius Armi	Information officer, Sonera Ltd	1997-2000
Hynninen Ari	Manager, Elisa Ltd.	1997-1999
Ilola Anne	Information officer, Elisa Ltd.	2004
Kalm Jarmo	COO, Elisa Ltd.	1997
Kervinen Juha	Information manager, Elisa Ltd.	1999
Killström Ulla	Director, Elisa Ltd.	2001-2004
Lausteela Riitta	CEO, Suomen Gallup, Mainostieto Ltd.	2002
Lehikoinen Jukka	Information Manager, Elisa Ltd.	2001
Lehmus Pasi	Develop director, Elisa Ltd.	1996
Martikainen Olli	Docent, Vice president, Sonera Ltd	1996
Mattheiszen Matti	CEO, Elisa Ltd.	1996-2000
Pere Katriina	Senior Analyst, The Ministry of Transport and Communications Finland	1998-2000
Reinamo Seppo	Development Director, Finnet Association	1996-1999
Rikala Aija	Communications Officer, Elisa	1996-1999
Svento Reijo	Managing Director, Finnet Association	1999
Takala Markku	Director, Economy, Datatie Ltd.	1998
Terävä Vesa	EU-assistant, The Ministry of Transport and Communications Finland	1998
Vesa Anna-Maija	Communications Officer, Sonera Finland	1998-1999
Weckström Juha-Pekka	Development Director, Sonera Finland Ltd	1997-2000
Öörni Seija	Planning Officer, Statistics Central Finland	1997-2000

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## APPENDICES

### APPENDIX 1: The Finnish Telephone Companies

Finnish Telephone Companies in their strategic groups, 1992-1998<sup>445</sup>

#### National Group

99 Sonera Oyj /Tele

#### Helsinki Group

7 Elisa /Helsingin Puhelin Oyj

#### Regional Group

20 Keski-Suomen Puhelin Oy

39 Oulun Puhelin Oy

48 Päijät-Hämeen Puhelinyhdistys

55 Soon Oy /Tampereen Puhelin

57 Vaasan Läänin Puhelin Oy

25 Kuopion Puhelin Oy

44 Pohjanmaan Puhelinosuuskunta

49 Lännen Puhelin Oy

56 Turun Puhelin

#### Local Group

1 Alajärven Puhelinosuuskunta

5 Eurajoen Teleosuuskunta

8 Huittisten Puhelin Oy

10 Puhelinosuuskunta IPY

13 Jakobstadsnejdens Telefon Ab

15 Puhelin Oy Telekarelia

17 Kankaanpään Puhelin Oy

19 Keikyän Puhelinosuuskunta

22 Kokkolan Puhelin Oy

27 Laitilan Puhelinosuuskunta

30 Loimaan Seudun Puhelin Oy

32 Mariehamns Telefon Ab

34 Mikkelin Puhelinyhdistys

41 Turun Seudun Puhelin Oy

45 Pohjois-Hämeen Puhelin Oy

51 Riihimäen Puhelin Oy

53 Savonlinnan Puhelinyhdistys

61 Ålands Telefonandelslag

4 Etelä-Satakunnan Puhelin Oy

6 Forssan Seudun Puhelin Oy

9 Hämeen Puhelin Oy

11 Ikaalisten-Parkanon Puhelin Oy

14 Joensuun Puhelin Oy

16 Kajaanin Puhelinosuuskunta

18 Karjaan Puhelin

21 Kemiön Puhelinosakeyhtiö

23 Kymen Puhelin Oy

29 Lohjan Puhelin Oy

31 Loviisan Puhelinosuuskunta

33 Härkätien Puhelin Oy

40 Outokummun Puhelin Oy

42 Paraisten Puhelin Oy

46 Porin Puhelin Oy

52 Salon Seudun Puhelin Oy

58 Vakka-Suomen Puhelin Oy

Mergers among Finnish Telephone companies 1992-1998

1993 Someron Puhelin to Salon Seudun Puhelin Oy

1994 Kälviän Puhelin Oy to Kokkolan Puhelin Oy

1995 Tele-Teljä Oy, Rauman Seudun and V-S Teleosuuskunta to Lännen Puhelin Oy

1997 Liedon Puhelin and Lounais-Suomen Puhelin Oy to Turun Seudun Puhelin Oy

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<sup>445</sup> The number in front of the telephone company is used for the purposes of this study only.

## APPENDIX 2: De-regulative actions

The most important de-regulative actions in the FTC during 1987-1999

1987	The Telecommunications Act came into force. The administration was transferred from the Post and Telecommunications Institution to The Ministry of Transport and Communications in Finland
1988	Telecommunications and data transmission of firms were partly opened to competition. New Radio Act created new preconditions to more effective Radio administration and the use of Radio frequency.
1990	With the change of The Telecommunications Act the special rights of the Post and Telecommunications Institution were repealed. Telecommunications in data and GSM-networks were opened to competition.
1991	Permissions for regional Radio-telecommunication network operations were granted. Telecommunications between firms were totally opened to competition
1992	Data transmission permissions were abolished for free competition. Rival permissions for long distance and local telecommunications were granted.
1994	Full scale competition for long distance and international telecommunications began.
1996	With the change in The Telecommunications Act, the telecommunication operators were obligated to make possible the use of telecommunication connections for other telecommunication firms. Discretionary permissions were abolished. The regulation of prices was ceased.
1997	The Telecommunications Act market abolished Acts of Telecommunications: possibilities for telecommunication firms to hire networks economically at a more reasonable price were improved, the separation of telecommunication network and telecommunication services became obligatory, only the building of mobile networks was any more licensed. Some telecommunications firms were named "Firms with a remarkable market power". These firms were under a more intensive authority control than other firms on the market.
1998	The transmission of international telecommunications to Finland was mainly liberated from the obligatory announcements.
1999	The total pricing of telecommunications services was made possible via the obligatory "end to end" pricing, that is the separate pricing of incoming and outgoing telecommunication services.

### APPENDIX 3: Finnet Group affiliated companies

Key figures of Finnet Group affiliated companies, 1992-1998

Table: Key figures of Datatie Ltd, 1992-1998

Datatie Ltd	1992	1993	1994	1995	1996	1997	1998
Turnover, FIM, million	71.7	93.6	121.3	146.0	242.0	285.0	325.2
Balance sheet, FIM million	27.2	27.8	43.4	43.6	47.8	69.1	83.3
Profitability, FIM million	1.9	-0.1	11.8	6.2	13.6	22.0	20.2
Investment, FIM million	3.4	9.9	2.7	3.1	2.3	8.1	19.3
Personnel	22	26	28	35	42	53	57
Personnel costs, FIM million	5.3	6.6	7.8	8.9	12.6	15.9	19.8
Access number, 1000 units	6.2	8.1	8.9	9.3	10.9	n.a.	n.a.
Advertising costs, FIM million	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table: Key figures of Finnet International Ltd, 1992-1998

Finnet International Ltd	1992	1993	1994	1995	1996	1997	1998
Turnover, FIM, million	n.a.	n.a.	15.8	71.0	106.0	307.1	355.0
Balance sheet, FIM million	n.a.	n.a.	59.1	85.3	117.4	152.1	172.2
Profitability, FIM million	n.a.	n.a.	-3.1	20.2	31.8	57.3	66.9
Investment, FIM million	n.a.	n.a.	9.3	17.1	11.5	32.2	12.8
Personnel	n.a.	n.a.	4	14	22	32	56
Personnel costs, FIM million	n.a.	n.a.	1.6	4.4	6.5	8.9	15.0
Advertising costs, FIM million	0.1	0.1	2.2	3.3	5.9	5.0	5.9

Table: Key figures of Kaukoverkko Ysi Ltd, 1992-1998

Kaukoverkko Ysi Ltd	1992	1993	1994	1995	1996	1997	1998
Turnover, FIM, million	n.a.	n.a.	99.0	108.1	140.6	196.6	195.2
Balance sheet, FIM million	n.a.	n.a.	49.7	89.7	149.2	184.2	282.0
Profitability, FIM million	n.a.	n.a.	24.2	27.8	39.5	57.8	97.1
Investment, FIM million	n.a.	n.a.	0.8	15.2	20.4	6.3	8.2
Personnel	n.a.	n.a.	6	9	27	48	26
Personnel costs, FIM million	n.a.	n.a.	0.3	2.5	8.3	16.2	7.9
Advertising costs, FIM million	0.1	2.9	4.0	2.7	1.6	2.0	1.1

Table: Key figures of Radiolinja Ltd, 1992-1998

Radiolinja Ltd	1992	1993	1994	1995	1996	1997	1998
Turnover, FIM, million	0.5	9.1	76.1	257.6	594.7	1151.2	2022.1
Balance sheet, FIM million	37.8	82.9	209.8	292.6	378.5	706.4	1329.9
Profitability, FIM million	-24.2	-6.8	-3.4	-7.1	37.7	99.9	244.6
Investment, FIM million	3.2	7.6	13.4	42.2	74.3	219.7	620.0
Personnel	13	25	54	128	209	328	450
Personnel costs, FIM million	2.3	3.7	7.4	18	32.2	57.2	93
Access number, 1000 units	2.2	8.9	48.6	127.3	280.0	590.0	981.0
Advertising costs, FIM million	0.5	1.9	3.9	10.6	8.2	24.2	48.3

Table: Group advertising cost of Finnet Group, 1992-1998

Finnet Group	1992	1993	1994	1995	1996	1997	1998
FG group advertising costs, FIM million	0.1	4,7	7,3	12,8	14,1	15,3	18.2



#### APPENDIX 4: The Advanced Strategy-Performance –model variables

The variables used in the Advanced Strategy-Performance –model

Scope	Accumulated taxes in the operational area	Number of potential firms	Population	Market research variables <sup>446</sup>
Resources	Number of personnel	Number of employees with academic education	Number of employees with institute education	Fixed assets
	Investment	Cash and financial assets	Current assets	Short term debts
	Long term debts	Solvency	Depreciation	
Logistics	Number of fixed-net accesses	Number of fixed-net company accesses	Channel rents paid to other telephone companies	Number of telephone company outlets
	Personnel costs	Net capital costs		
Marketing	Total call revenues	Local-net revenues	Data transmission revenues	Number of mobile calls
	Mobile call minutes	Long distance calls	International calls	Household price-basket
	Company price-basket	Advertising costs		
Internal processes	Internal efficiency index		Personnel research variables <sup>447</sup>	
External processes	Market power		Market research variables	
Economic performance	Turnover share		Profitability	

<sup>446</sup> The variables were presented earlier in the empirical part of the present study.

<sup>447</sup> See the variables in appendix 6.

## APPENDIX 5: Market research process

### The research process and main results of the market research

A covering market research was carried out in the company customer market of the Finnish telephone companies in co-operation with Sonera and Elisa telephone companies. However, these companies insisted that only image and service level results would be available for the purposes of this study. They wanted the rest of the market research result to remain a business secret.<sup>448</sup> The rest of the telephone companies in the FTC refused to participate in the market research.<sup>449</sup> The following shows firstly the main steps of the data gathering procedure. Next, the market research image and service quality questions are shown. Then a description of the analyses is discussed. The results of relevant variables are also introduced. Finally, the covering letter of the market research is presented.

The research address database source is the Blue Book, which includes all active Finnish companies.<sup>450</sup> The questionnaire was mailed in April 1998 to 1000 companies randomly selected from this database. All the Finnish industry branches and the operation areas of all the telephone companies are therefore involved. Altogether, 563 companies fulfilled and returned the questionnaire. Thus, the answering percent is 56.3%. The received data was weighted so that the final analysis data construction is parallel with the total Finnish industry construction. As a result, the weighted total respondent amount resulted in N=2336. This allows conclusions to be drawn on the external process direction results as a whole, but do not allow detailed conclusions to be drawn separately as to the individual variable interpretations.

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<sup>448</sup> Interviews Weckström, Mattheiszen. The questionnaire is available from the researcher on request.

<sup>449</sup> It was attempted to increase the participation degree among telephone companies by discussing with 28 telephone company managers in phone call contacts. The usual reason, why the telephone companies did not participate in this research, was according the managers: *"We know our market, customers and their needs. Thus, we do not need research processes or market research results."* Often the managers argued that they cannot participate because of budgetary reasons.

The covering letter of the market research is presented below in Finnish  
 Helsingin kauppa- ja kauppakorkeakoulu  
 Yrittäjyys ja pienyritysten johtaminen  
 KTL Pekka Killström  
 PL 1210  
 00101 HELSINKI

KYSELY  
 Helmikuu 1998

Toimitusjohtajalle/ Tietoliikenneasioista vastaavalle

**HELSINGIN KAUPPAKORKEAKOULU JA LIIKENNEMINISTERIÖ TUTKIVAT  
 TELEPALVELUJEN MERKITYKSEN YRITYSTEN MENESTYSTEKIJÄNÄ**

Puhelin- ja tietoliikenteen täysimittainen hyödyntäminen on tärkeä menestystekijä yrityksille. Koska suomalaiset yritykset ja telepalvelutoimittajat ovat maailmanlaajuisesti telepalvelujen kehittämisen kärjessä, halutaan yrityksille tästä koituvien etujen lisääntyvän.

Kyselyllä selvitetään, mikä on telepalvelujen merkitys yritysten menestymiselle. Samalla tutkitaan telepalvelutoimittajien yrityskuva ja palvelutaso. Tutkimustulokset auttavat telepalvelutoimittajia kehittämään palveluja asiakkaiden toiveiden mukaisiksi.

Kysely lähetetään satunnaisesti valituille yrityksille, jotka siis edustavat kaikkia Suomessa toimivia yrityksiä. On tärkeää, että kaikki kyselyn saaneet vastaavat siihen.

Tuloksista odotettavissa merkittävää hyötyä

Yrityksille ja tietoliikennealalle koituvien mittavien hyötyjen vuoksi Helsingin kauppa- ja kauppakorkeakoulu, liikenneministeriö ja merkittävät telepalvelutoimittajat tukevat tutkimusta. Tulokset julkaistaan väitöskirjana osana tietoliikennealan kokonaisselvitystä.

Vastaaminen on helppoa, palauttamista toivotaan pian.

Vastaaminen käy helposti rastittamalla sopiva vaihtoehto ja /tai antamalla arvosana telepalvelutoimittajille. Näiden lisäksi tiedustellaan yrityksen teletoimintaan liittyviä tietoja.

Kysely tulisi palauttaa oheisessa kuoressa viikon kuluessa, kuitenkin viimeistään huhtikuun loppuun mennessä. Kyselyyn voi vastata nimettömänä. Yksittäisen yrityksen tiedot käsitellään luottamuksellisesti ja ne jäävät vain tutkijan tietoon.

Vastaajien kesken arvotaan puhelinvastaajia

Oheisella lipukkeella voi osallistua kymmenen Coda-a-phone puhelinvastaajan arvontaan. Se tulee palauttaa vastausten kanssa samassa kuoressa. Lipukkeen tietoja ei yhdistetä kyselyn vastauksiin.

Lisätiedot

Lisätietoja saa Pekka Killströmiltä (09-803 0488). Tutkimusta ohjaa professori Arto Lahti Helsingin kauppa- ja kauppakorkeakoulusta.

Yrityksellenne menestystä toivoen Pekka Killström, KTL

Table: The image questions in the market research

3(8)

Image expectation questions	
Finnish	English
Kuinka tärkeitä seuraavat telepalvelutoimittajien ominaisuudet ovat yrityksenne menestyksen kannalta?	How important are the following features of a telecommunication provider, when you consider the performance of your own company?
Voi suositella muille yrityksille	Recommendable
On johtava tulevaisuudessa	Future leader
Kilpailee aktiivisesti	Active competitor
On toiminnassaan asiakaslähtöinen	Customer oriented
On luotettava	Reliable
On voimavaroiltaan vakavarainen	Established resources
On teletekniikan kehityksen kärjessä	Technology forerunner
On paikallinen	Local
On valtakunnallinen	National
On kansainvälinen	International
Toimii ympäristöystävällisellä tavalla	Environmentally minded
Tiedottaa aktiivisesti julkisuudessa	Active information services
Johtohenkilöt päteviä	Competent management
Tarjoaa laajaa palveluvalikoimaa	Extensive product selection
On erikoistunut joihinkin palveluihin	Specialised in some services
Toimii tietoliikenne- ja atk-palvelujen kokonaistoimittajana	Full scale supplier
Toimii vastuullisen yhteistyökumppanin tavoin	Responsible
Tuntee hyvin yritysasiakkaan toimialan	Customer industry knowledge
Toimii liiketaloudellisin voittoa tavoittelevin perustein	Operates as a share holder company, business profit oriented
Toimii asiakkaidensa omistamana yhteisönä omakustannushintaan pyrkivin perustein	Operates as a mutual company society
The question used concerning the realisation of image	
Mihin tuntemiinne telepalvelutoimittajiin seuraavat ominaisuudet sopivat?	To which telecommunication operator would you attach the following image features?
Ominaisuudet ovat samat kuin edellisessä imago kysymyksessä.	The features used are the same as in the question of the image expectation.
The companies evaluated:	
Finnet telephone companies	
Radiolinja	
Datatie	
Kaukoverkko Ysi	
Finnet International	
Sonera	
Telia	

Table: The service quality questions in the market research

4(8)

Finnish	English
Merkittää kouluarvosana (4-10) jokaiselle riville niiden telepalvelutoimittajien kohdalle, joita yrityksenne käyttää.	How important are the following features for a telecommunication provider, when you consider the performance of your own company?
Yhteydenpito asiakkaaseen	Contact frequency
Henkilöstön ammattitaito	Professional ability
Palvelumuotojen riittävyys	Service selection
Hinta-laatusuhde	Price-quality
Palvelun virheettömyys	Service accuracy
Palvelun nopeus	Service speed
Yhteyshenkilön henkilöominaisuudet	Contact person quality
Palvelujen käyttöopastus	Service help
Asiakasjoustavuus	Customer flexibility
Palveluista ja tuotteista kertominen	Product information
Palveluhalukkuus	Service willingness
Henkilöstön ystävällisyys	Service friendliness
Yhteydensaannin helppous	Reach of services
Kustannussäästömahdollisuuksista kertominen	Information on cost saving possibilities
Raportointi yrityksenne telepalvelujen käytöstä	Quality of report activities
Hinnoittelun selkeys	Pricing clarity
Laskujen virheettömyys	Invoice accuracy
Laskujen tietosisältö	Invoice information
Datasiirron luotettavuus	Data transmission reliability
Toimitusten sujuvuus	Fluent deliveries
Kaupanteon jälkihoito	After sales service
Huoltotoiminta	Maintenance

In the market research, the respondents were asked to evaluate which of the telephone company features mentioned in the table above are the most important. Then the image features were ranked according to the number of answers in the direct distribution of each strategic group. Respectively, in order to construct the realised image in each strategic group, the respondents were asked to attach the image features to the telephone companies to which the feature best fitted according to their evaluations. Then the realised image features were ranked according to the number of answers in the direct distribution of each strategic group. Because of the holistic approach of the present study, statistical tests between the differences of the strategic group image features in the market research were not performed.

The importance of each service quality expectation feature was constructed through correlation analysis between each service quality feature and the mean of the total service level. This procedure was performed separately in each of the strategic groups. The correlation of each individual service quality feature result was calculated towards the total service quality grade. Then the individual service features were ranked according the correlation value. Thus, it is concluded that, because the service quality features with the highest correlation values have the strongest influence in the total service quality level, they also have the greatest expectation importance to the respondent.

In the analysis of the realised service quality, the means and the best grades of the individual service quality features were utilised. Because of the holistic approach of the present study, statistical tests between the differences of the strategic group service quality features in the market research were not performed.

The following tables present the results of the image and service quality expectations as well as the realised image and service quality in the strategic groups.

Table: The image expectation results in the strategic groups

6(8)

The percentage shows how many respondents think a telephone company image feature as important as they consider the performance of their firm, %.	National Group %	Helsinki Group %	Regional Group %	Local Group %	Industry mean %
Recommendable	4.9	1.4	5.8	6.9	4.8
Future leader	16.7	12.0	15.3	11.7	13.9
Active competitor	23.9	19.7	34.0	17.7	23.8
Customer oriented	58.1	57.9	53.8	47.9	54.4
Reliable	81.2	78.5	79.7	72.9	78.1
Established resources	31.7	31.2	26.8	30.0	29.9
Technology forerunner	51.3	47.6	42.7	55.7	49.3
Local	6.1	6.7	11.2	16.6	10.2
National	15.9	16.7	14.2	13.8	15.2
International	16.7	12.1	12.9	14.9	14.2
Environmentally minded					
Active information services	8.7	3.5	15.1	12.7	10.0
Competent management	26.7	21.1	41.7	28.4	29.5
Extensive product selection	44.4	38.9	53.8	44.3	45.4
Specialised in some services					
Full scale supplier	26.8	21.4	26.6	23.9	24.7
Responsible	60.3	61.0	53.5	60.6	58.9
Customer industry knowledge	27.4	29.6	23.5	22.0	25.6
Operates as a business profit oriented company	7.9	5.7	8.8	9.4	8.0
Operates as a mutual society	5.4	4.2	6.5	6.4	5.6

Table: The realised image results in the strategic groups

The percentage shows how many respondents attached the image feature to the telephone company in the strategic group, %	National Group %	Helsinki Group %	Regional Group %	Local Group %
Recommendable	63.7	43.3	50.1	54.1
Future leader	69.1	32.0	19.9	14.7
Active competitor	51.2	32.0	23.8	23.0
Customer oriented	48.5	40.6	39.8	58.4
Reliable	62.7	51.4	45.1	51.6
Established resources	72.0	57.9	32.0	31.6
Technology forerunner	70.8	30.0	25.5	16.1
Local	12.7	76.0	79.7	79.8
National	76.0	7.5	4.6	2.0
International	61.9	8.2	11.4	3.0
Environmentally minded	20.8	20.1	21.3	26.1
Active information services	58.2	30.8	26.9	18.4
Competent management	41.6	29.0	31.1	27.3
Extensive product selection	71.1	50.7	42.2	28.2
Specialised in some services	17.8	9.4	13.5	7.0
Full scale supplier	59.2	28.5	42.2	26.8
Responsible	50.1	45.6	44.3	50.7
Customer industry knowledge	36.6	39.0	46.6	43.0
Operates as a business profit oriented company	42.9	35.6	39.5	22.7
Operates as a mutual society	7.6	24.3	28.6	39.1

Table: The importance of service quality expectation features

7(8)

Strategic groups	National Group	Helsinki Group	Regional Group	Local Group
Service quality correlation				
Contact frequency	0,68	0,44	0,69	0,61
Professional ability	0,69	0,63	0,68	0,81
Service selection	0,44	0,56	0,36	0,72
Price-quality relationship	0,63	0,52	0,71	0,63
Service correctness	0,57	0,54	0,58	0,51
Service speed	0,71	0,74	0,76	0,72
Contact person quality	0,62	0,32	0,72	0,60
Service using guidance	0,65	0,40	0,74	0,44
Customer flexibility	0,70	0,30	0,82	0,60
Product information	0,57	0,29	0,70	0,76
Service willingness	0,71	0,43	0,79	0,77
Service kindness	0,66	0,60	0,76	0,61
Reach of services	0,61	0,56	0,61	0,68
Information on cost saving possibilities	0,60	0,38	0,63	0,66
Reporting quality	0,46	0,29	0,35	0,61
Pricing clarity	0,52	0,47	0,59	0,51
Invoice correctness	0,21	0,46	0,45	0,39
Invoice information	0,34	0,39	0,58	0,38
Data transmission reliability	0,27	0,44	0,48	0,44
Fluent deliveries	0,58	0,62	0,50	0,49
After sales service	0,76	0,68	0,67	0,72
Maintenance	0,65	0,61	0,67	0,61



Table: The realised service quality results in the strategic groups

8(8)

Strategic groups	National Group		Helsinki Group		Regional Group		Local Group	
Services quality level, mean and the share of the best grades, %	Mean (4-10)	Best grades (9-10) %	Mean (4-10)	Best grades (9-10) %	Mean (4-10)	Best grades (9-10) %	Mean (4-10)	Best grades (9-10) %
Contact frequency	7.2	13.6	7.1	10.4	7.1	11.0	7.2	13.7
Professional ability	8.0	37.4	8.0	41.3	7.9	29.9	7.9	31.5
Service selection	8.3	50.0	8.4	55.9	8.2	43.5	8.0	38.1
Price-quality relationship	7.4	12.2	7.3	9.5	7.4	18.2	7.4	21.8
Service correctness	7.8	25.4	7.7	30.6	7.9	26.1	7.7	32.4
Service speed	7.6	22.8	7.7	27.9	7.6	28.1	7.6	29.0
Contact person quality	7.8	31.0	7.7	26.5	7.9	40.2	7.7	40.2
Service using guidance	7.5	20.9	7.5	17.1	7.5	19.8	7.5	21.0
Customer flexibility	7.5	22.4	7.5	19.9	7.5	24.4	7.6	24.5
Product information	7.6	22.9	7.5	20.4	7.6	25.3	7.6	30.8
Service willingness	7.8	32.5	7.7	31.8	7.9	41.3	7.6	23.5
Service kindness	8.2	43.7	8.2	37.3	8.2	49.9	8.1	41.2
Reach of services	7.8	32.4	7.7	24.8	7.9	40.2	7.8	39.5
Information on cost saving possibilities	7.0	11.4	6.7	7.2	7.0	11.0	6.8	12.8
Reporting quality	7.2	19.2	7.2	18.0	7.1	17.1	7.0	10.6
Pricing clarity	7.2	14.3	7.0	9.9	7.8	22.6	7.2	16.8
Invoice correctness	8.1	45.6	8.1	45.6	8.2	40.5	8.4	55.5
Invoice information	7.8	34.2	7.8	39.0	7.9	33.3	7.9	29.9
Data transmission reliability	8.3	45.7	8.2	44.1	8.4	48.7	8.1	44.9
Fluent deliveries	7.9	32.2	7.9	31.8	8.0	34.7	7.9	39.9
After sales service	7.3	16.0	7.2	14.1	7.2	11.0	7.2	14.1
Maintenance	7.7	22.4	7.7	21.2	7.8	29.5	7.5	22.6
Total mean	7,77		7,90		7,65		7,79	

## **APPENDIX 6: Personnel research**

### **THE RESEARCH PROCESS AND MAIN RESULTS OF THE PERSONNEL RESEARCH**

The internal personnel research was carried out in one telephone company in 1998, in Ringring.<sup>451</sup> The rest of the telephone companies in the FTC refused to participate to the research.

The research questionnaire was sent internally to every person working in Ringring in October 1998 - that is to the directors, managers and employees. Altogether 639 respondents of the total personnel (3593) of Ringring completed and returned the questionnaire, the response rate being 17.8 %.

The internal personnel research included several areas of interest. It was agreed however, with Ringring that only the questions and results concerning the image, service level and strategy implementation would be available for the purposes of this study. The rest of the research was classified as a business secret.

Although the distribution of answers reflects the personnel structure of Ringring well, only a holistic and supportive interpretation approach can be applied in the context of strategy-performance evaluations. Because of the relatively low response rate, a cautious and careful interpretation must follow as to the interpretation of individual research variables. The total results give, however, valuable information for managerial strategy work from a new internal viewpoint as the managers strive after good strategy implementation procedures in the firm.

The research data was analysed through direct distributions and the t-test was used to see the differences between directors and managers and the rest of the personnel. No remarkable differences were found in the individual research variables. However, as the results are observed as a whole, some nuances between these personnel groups are to be seen in the image, service and strategy implementation profiles.

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<sup>451</sup> A pseudonym

Table: The questions in the personnel research

2(4)

Finnish	English
Yrityskuva: Arvioi kuinka tärkeänä yritysasiakkaat pitävät seuraavia yrityskuvan ominaisuuksia. Arvioi toteutunutta Ringringin yrityskuva	Image: Pls. evaluate how important the following features are for company customers. Pls. evaluate the realised image of Ringring in the following features.
Palvelutaso: Arvioi, mikä arvosana kuvaa parhaiten Ringringin yritysasiakkaille tarjoamaa palvelutasoa.	Service quality Which grade best defines the realised service quality level of Ringring.
The image and service quality variables are the same as those used in the market research presented above.	
Strategian implementointi: Arvioi työsi kannalta kuinka hyvin seuraavat ominaisuudet kuvaavat Ringringiä.	Strategy implementation Pls. evaluate how well the following features describe Ringring in your opinion.
Yhteiset arvot ovat kirjallisessa muodossa	Company values exist in writing
Henkilöstö tuntee hyvin yhteisten arvojen sisällön	Personnel know the company values well
Henkilöstö osallistuu yhteisten arvojen määrittelyyn	Personnel participate in the definition of the company values
Henkilöstö noudattaa aktiivisesti yhteisiä arvoja	Personnel actively follow company values
Päämäärät ja strategiat ovat kirjallisessa muodossa	Company goals and strategy exist in writing
Henkilöstö tuntee hyvin päämäärät ja strategiat	Personnel know the strategy and company goals well
Henkilöstö osallistuu päämäärien ja strategioiden valmisteluun	Personnel participate in the definition of company goals and strategy
Henkilöstö pyrkii aktiivisesti päämääriin	Personnel strive actively towards company goals
Vuositavoitteet ovat kirjallisessa muodossa	Yearly objectives exist in writing
Henkilöstö tuntee hyvin vuositavoitteet	Personnel know the yearly objectives well
Henkilöstö osallistuu aktiivisesti vuositavoitteiden valmisteluun	Personnel participate in the definition of yearly operations
Henkilöstö pyrkii aktiivisesti vuositavoitteisiin	Personnel strive actively towards yearly objectives
Esimiehet seuraavat aktiivisesti vuositavoitteiden toteutumista	Realisation of yearly objectives is actively pursued by managers.
Vastuu asiakassuhteiden hoidosta kokonaisuutena on selkeä Ringringissä	Customer relationship responsibility as a totality is clear in Ringring
Asiakastarpeiden muutoksia tarkastellaan yhtä tarkasti kuin Ringringin taloudellisia tuloksia	Changes in customer needs are evaluated as thoroughly as the economic results of Ringring
Vastuu asiakkaista on määritelty omassa organisaatiossa selkeästi	Customer responsibility is clear in the respondent's organisation
Asiakaspalvelujärjestelmää hyödynnetään aktiivisesti	The customer service system is actively utilised
Nykyorganisaatio tukee hyvin asiakaslähtöisyyttä	Existing organisation supports the customer orientated business approach well
Kilpailijoiden toiminta tunnetaan hyvin	Competitors' operations are known well
Kilpailijoiden vahvuudet ja heikkoudet tunnetaan hyvin	Competitors' strengths and weaknesses are known well
Kilpailijoiden toimenpiteet ohjaavat toimintaamme	Competitors' operations guide our operations
Kilpailuanalyysi päivitetään vähintään vuosittain	Competition analyses are updated yearly

Table: Strategy implementation results according to personnel

3(4)

	Employees	Managers	Mean
Values in writing	3.0	3.5	3.1
Operative target follow up	3.0	3.3	3.0
Customer relationship responsibility	2.9	3.2	2.9
Operative target orientation	2.9	3.3	2.9
Yearly operations in writing	2.9	2.9	2.8
Value knowledge	2.8	2.9	2.8
Customer orientated orientation	2.8	2.9	2.8
Active value use	2.8	3.0	2.8
Strategies in writing	2.8	2.7	2.8
Competitor knowledge	2.8	2.4	2.7
Strategy orientation	2.8	2.8	2.7
Competitor operation knowledge	2.8	2.4	2.7
Customer service system use	2.8	2.8	2.7
Operations knowledge	2.7	2.9	2.6
Strategy knowledge	2.7	2.6	2.6
Competitor follow up	2.6	3.0	2.5
Guided by competitors	2.6	2.4	2.5
Customer relations total responsibility	2.5	2.4	2.5
Customer need follow up	2.5	2.1	2.5
Operation definition participation	2.4	2.8	2.4
Value definition participation	2.4	2.6	2.4
Strategy definition participation	2.4	2.3	2.3
Total mean	2.7	2.8	2.7

Table: The image realisation results according to personnel

The image means among employees and total mean including managers, (1-4), 1= not at all applicable to Ringring, 4= perfectly applicable to Ringring	Employees	Managers	Total mean
Recommendable	3.6	3.6	3.5
Future leader	3.5	3.7	3.4
Active competitor	3.3	3.6	3.3
Customer oriented	3.3	3.3	3.3
Customer firm knowledge	3.2	3.3	3.2
Reliable	3.5	3.6	3.5
Established resources	3.6	3.6	3.6
Technology forerunner	3.6	3.3	3.6
Local	3.6	3.7	3.6
National	3.3	3.3	3.3
International	3.1	2.6	3.0
Environmentally minded	2.9	2.8	2.8
Active information services	3.1	3.2	3.1
Competent management	3.1	3.1	3.0
Extensive product selection	3.4	3.4	3.4
Specialised in some services	3.1	2.9	3.0
Full scale supplier	3.3	3.0	3.2
Responsible	3.1	3.1	3.1
Customer industry knowledge	3.1	3.1	3.1
Operates as a business profit oriented share holder company	3.3	3.5	3.3
Operates as a mutual society company	3.0	2.1	2.8
Total mean	3.3	3.2	3.2

Table: The service quality means according to personnel 4(4)

The service quality mean among employees and total mean including managers, (4-10), 4= poor, 10= excellent	Employees	Total mean
Price clarity	7.1	7.1
After sales service	7.3	7.2
Customer feed-back utilising	7.5	7.4
Cost saving information	7.5	7.5
Reach of services	7.6	7.6
Customer feed-back gathering	7.7	7.6
Service correctness	7.6	7.6
Service speed	7.7	7.6
Contact frequency	7.6	7.6
Reach of services	7.5	7.6
User guidance	7.7	7.7
Information on products	7.8	7.7
Invoice correctness	7.8	7.8
Invoice information	8.0	7.9
Fluent deliveries	7.9	7.9
Quality-price relationship	7.9	8.0
Customer flexibility	8.0	8.0
Maintenance	8.1	8.1
Service selection	8.2	8.2
Service willingness	8.3	8.3
Service kindness	8.4	8.5
Professional ability	8.6	8.5
Data transmission reliability	8.6	8.6
Total service level	8.2	8.1

Table: The service quality according to personnel, the best grades

The shares of best grades (9-10) of the service quality mean among employees and managers, scale (4-10), %	Employees	Managers
Price clarity	9.0	4.0
After sales service	9.0	17.0
Customer feed-back utilising	19.0	15.5
Cost saving information	14.0	17.5
Reach of services	22.0	16.0
Customer feed-back gathering	17.0	13.0
Service correctness	12.0	21.0
Service speed	18.0	15.0
Contact frequency	13.0	31.0
Reach of services	22.0	22.0
User guidance	20.0	14.0
Information on products	20.0	11.0
Invoice correctness	26.0	29.0
Invoice information	38.0	27.5
Fluent deliveries	24.0	26.0
Quality-price relationship	27.0	35.0
Customer flexibility	32.0	28.0
Maintenance	32.0	38.5
Service selection	39.0	44.5
Service willingness	40.0	55.5
Service kindness	48.0	73.0
Professional ability	57.0	31.5
Data transmission reliability	58.0	48.5
Total service level	31.0	24.0

**APPENDIX 7: The strategic group clustering results in the FTC**

Table: Telephone company balance sheet in strategic groups, MFIM, 1992-1998

National Group	1992	1993	1994	1995	1996	1997	1998
Sonera	6161.0	5118.0	5963.0	6618.0	7448.0	11097.0	16730.0
Helsinki Group							
Helsingin Puhelin Oyj	2496.4	2975.5	3044.3	3191.3	3289.1	3915.1	6220.1
Regional Group							
Tampereen Puhelinosuuskunta	728.1	918.0	990.4	1009.8	1059.6	1085.7	1132.9
Turun Puhelin	266.2	282.0	387.9	354.4	371.0	663.0	673.4
Päijät-Hämeen Puhelinyhdistys	341.3	327.4	325.1	480.2	468.9	480.4	521.8
Oulun Puhelin Oy	269.2	356.1	375.3	389.9	398.6	423.6	478.1
Vaasan Läänin Puhelin Oy	349.1	399.3	399.2	370.5	379.8	406.3	437.4
Lännen Puhelin Oy	247.2	256.2	263.6	296.0	298.3	320.1	353.7
Kuopion Puhelin Oyj	222.1	265.8	276.2	283.3	293.1	302.6	351.7
Keski-Suomen Puhelin Oy	222.3	258.4	259.6	281.0	282.5	301.5	326.5
Pohjanmaan Puhelinosuuskunta	154.7	248.0	250.0	260.7	262.3	271.9	280.0
Local Group							
Hämeen Puhelin Oy	161.8	156.0	148.3	188.3	191.7	193.8	199.5
Kymen Puhelin Oy	89.8	111.2	157.7	166.5	173.5	180.1	199.3
Salon Seudun Puhelin Oy	120.1	117.9	115.9	134.2	137.8	151.1	159.7
Loimaan Seudun Puhelin Oy	56.8	79.3	86.4	87.9	93.5	121.5	135.0
Porin Puhelin Oy	108.0	113.7	111.5	113.2	121.7	129.3	133.7
Mikkelin Puhelinyhdistys	72.6	108.9	111.0	105.4	114.9	124.2	126.5
Joensuun Puhelin Oy	126.6	129.5	126.2	123.4	113.2	113.5	109.9
Kajaanin Puhelinosuuskunta	63.6	67.9	72.1	78.4	80.2	85.8	93.5
Riihimäen Puhelin Oy	71.1	85.1	85.9	86.6	85.4	90.1	91.8
Lohjan Puhelin Oy	75.2	77.9	79.7	80.0	80.9	84.4	90.3
Savonlinnan Puhelinyhdistys	70.2	71.1	68.9	83.7	84.2	85.1	88.5
Kokkolan Puhelin Oy	64.9	59.6	62.1	66.1	69.0	72.0	87.6
Forssan Seudun Puhelin Oy	59.8	61.5	63.7	67.7	69.5	70.5	74.4
Pohjois-Hämeen Puhelin Oy	53.7	66.0	66.0	65.4	67.7	70.9	72.0
Jakobstadsnejdens Telefon Ab	85.1	80.9	74.6	74.2	75.1	69.0	68.1
Turun Seudun Puhelin Oy	48.8	59.6	60.7	63.6	62.8	58.7	60.0
Etelä-Satakunnan Puhelin Oy	40.4	42.6	43.1	44.8	44.8	49.2	51.9
Ikaalisten-Parkanon Puhelin Oy	40.4	41.7	41.4	43.1	47.0	47.2	49.7
Vakka-Suomen Puhelin Oy	42.3	43.3	43.1	43.8	44.7	48.5	47.4
Puhelin Oy Telekarelia	45.6	43.8	44.3	45.1	45.9	45.5	46.5
Puhelinosuuskunta IPY	32.4	43.9	43.2	33.1	34.0	36.7	40.3
Kankaanpään Puhelin Oy	28.1	27.2	27.9	30.4	34.4	34.9	39.9
Karjaan Puhelin Oy	27.5	29.6	29.2	32.6	30.0	32.2	30.6
Loviisan Puhelinosuuskunta	28.8	28.4	27.5	28.3	28.1	29.0	30.5
Ålands Telefonandelslag	19.5	21.2	22.1	26.1	27.6	28.6	30.4
Mariehamns Telefon Ab	21.9	23.8	22.3	30.8	30.3	29.5	30.2
Huittisten Puhelin Oy	20.2	20.0	21.1	20.8	21.5	23.6	26.1
Paraisten Puhelin Oy	25.5	27.2	26.5	26.2	26.3	25.6	26.1
Laitilan Puhelinosuuskunta	20.3	19.2	17.8	19.6	21.3	21.9	22.3
Härkätien Puhelin Oy	16.2	15.4	15.3	15.5	15.3	17.1	18.5
Alajärven Puhelin	9.7	13.1	13.3	12.3	13.6	14.1	15.5
Outokummun Puhelin Oy	14.1	12.7	12.3	12.3	12.0	12.3	13.3
Kemiön Puhelinosakeyhtiö	7.3	7.5	8.4	10.5	11.4	11.1	10.3
Eurajoen Teleosuuskunta	10.2	9.6	9.2	8.6	8.1	7.5	7.4
Keikyän Puhelinosuuskunta	3.6	3.5	3.5	3.4	3.8	3.8	3.8

Figure: Diagram example of telephone company distances, Regional Group

**Group distances between telephone companies in the Regional Group, 1998, illustrative**

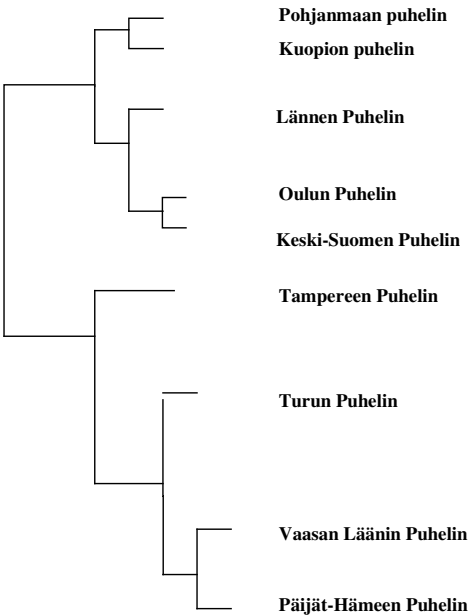
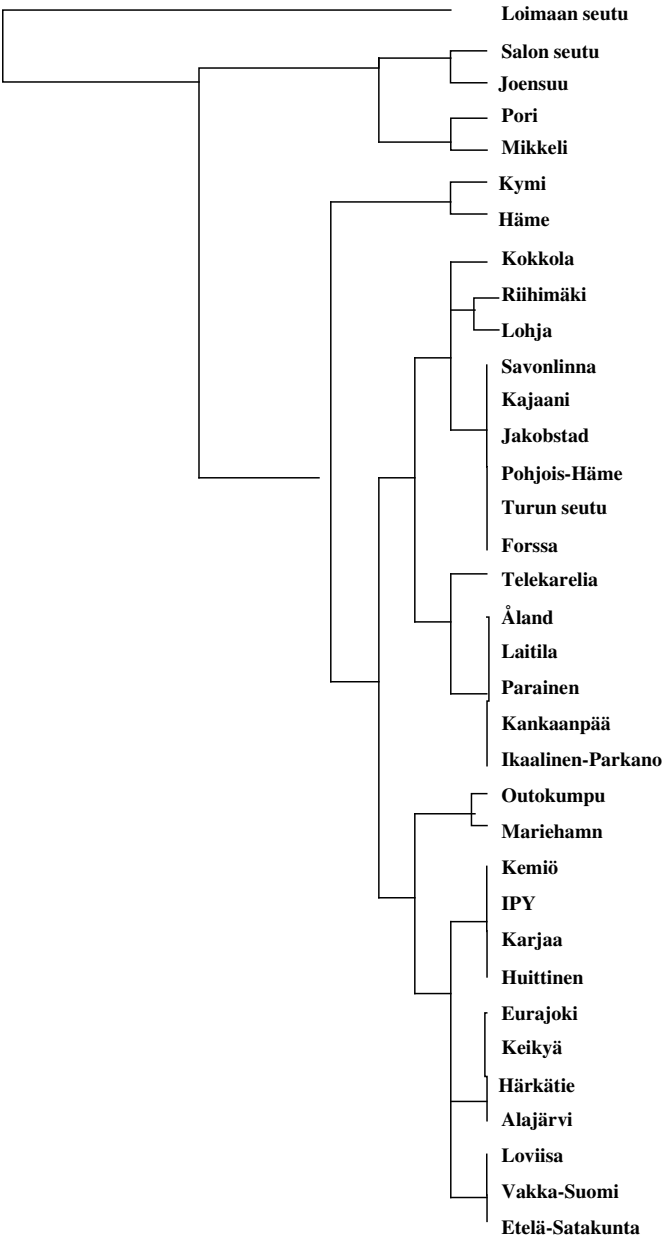


Figure: Diagram example of telephone company distances, Local Group

Group distances between telephone companies in the Local Group, 1998, illustrative





**APPENDIX 8: Examples of telephone company specific data**

Table: Population in the area of individual telephone companies

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	9.7	9.7	9.7	9.6	9.6	9.6	9.5
Etelä-Satakunnan Puhelin Oy	25.8	25.7	25.6	25.4	25.2	25.2	25.0
Eurajoen Teleosuuskunta	6.2	6.2	6.2	6.2	6.2	6.1	6.0
Forssan Seudun Puhelin Oy	34.1	34.3	34.1	34.1	33.9	33.7	33.5
Helsingin Puhelin Oy	1055.1	1070.1	1085.9	1103.1	1119.5	1136.9	1153.6
Huittisten Puhelin Oy	49.6	49.3	49.1	48.6	48.3	48.0	47.6
Hämeen Puhelin Oy	86.3	86.4	86.6	86.7	86.6	86.9	87.0
Puhelinosuuskunta IPY	24.0	24.0	24.1	24.0	24.0	23.8	23.6
Ikaalisten-Parkanon Puhelin Oy	22.3	22.3	22.1	21.9	26.7	21.5	21.2
Jakobstadsnejdens Telefon Ab	31.5	31.4	31.5	31.5	31.5	31.5	31.4
Joensuu Puhelin Oy	59.6	60.2	60.9	61.3	61.8	62.1	62.3
Puhelin Oy Telekarelia	28.1	28.3	28.3	28.3	28.4	28.4	28.3
Kajaanin Puhelinosuuskunta	36.7	36.8	36.9	36.9	36.8	36.5	36.6
Kankaanpään Puhelin Oy	13.6	13.6	13.5	13.5	13.4	13.3	13.3
Karjaan Puhelin Oy	28.7	28.7	28.7	28.6	28.5	28.4	28.3
Keikyän Puhelinosuuskunta	5.5	5.4	5.4	5.3	5.2	5.2	5.2
Keski-Suomen Puhelin Oy	135.8	136.7	138.2	139.5	141.1	142.7	144.1
Kemiön Puhelinosakeyhtiö	8.3	8.2	8.1	8.0	8.0	7.8	7.8
Kokkolan Puhelin Oy	46.7	47.1	47.3	47.2	47.1	47.1	47.0
Kymen Puhelin Oy	62.0	61.8	61.6	61.3	61.4	61.2	60.9
Kuopion Puhelin	121.2	121.9	122.7	123.3	123.8	124.3	124.5
Laitilan Puhelinosuuskunta	9.3	9.3	9.2	9.1	9.0	8.9	8.9
Lohjan Puhelin Oy	84.4	85.1	85.2	85.5	85.5	85.9	86.5
Loimaan Seudun Puhelin Oy	38.0	37.9	37.6	37.5	37.3	37.1	36.9
Loviisan Puhelinosuuskunta	16.9	16.7	16.5	16.3	16.2	16.1	16.0
Mariehamns Telefon Ab	15.4	15.5	15.6	15.6	15.6	15.7	15.9
Härkätien Puhelin	37.8	38.4	37.8	37.7	37.7	37.8	38.2
Mikkelin Puhelinyhdistys	44.1	44.3	44.5	44.8	44.8	44.8	44.8
Oulun Puhelin Oy	162.2	164.0	166.5	169.9	172.6	175.1	177.6
Outokummun Puhelin Oy	9.1	9.1	9.0	8.9	8.8	8.6	8.6
Turun Seudun Puhelin Oy	21.8	22.0	22.0	22.0	22.2	22.3	22.7
Paraisten Puhelin Oy	13.7	13.7	13.8	13.5	13.5	13.5	13.4
Pohjanmaan Puhelinosuuskunta	111.1	111.3	111.4	111.1	110.6	109.9	109.0
Pohjois-Hämeen Puhelin Oy	35.0	34.9	34.5	34.2	33.9	33.6	33.3
Porin Puhelin Oy	76.3	76.4	76.6	76.6	76.6	76.6	76.4
Päijät-Hämeen Puhelinyhdistys	217.1	217.4	217.5	217.4	217.0	217.1	217.0
Lännen Puhelin Oy	157.2	156.9	157.1	157.1	156.7	156.9	156.9
Riihimäen Puhelin Oy	78.0	78.2	78.4	78.4	78.3	78.6	78.7
Salon Seudun Puhelin Oy	58.0	58.1	58.4	58.8	59.0	59.3	59.6
Savonlinnan Puhelinyhdistys	40.7	40.5	40.5	40.5	40.2	40.0	39.6
Tampereen Puhelinosuuskunta	304.9	307.2	310.4	313.9	317.2	320.7	323.8
Turun Puhelin	184.8	185.5	187.6	190.1	192.3	194.3	196.6
Vaasan Läänin Puhelin Oy	220.2	221.1	221.5	221.3	221.4	221.2	221.3
Vakka-Suomen Puhelin Oy	24.1	23.8	23.5	23.2	23.2	23.0	22.9
Ålands Telefonandelslag	12.6	12.7	12.7	12.8	12.8	13.0	13.1
Sonera	2543.5	2545.7	2542.5	2536.1	2529.5	2521.5	2511.1

Table: Personnel size of telephone companies, 1992-1998

2(7)

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	16	14	14	14	14	14	14
Etelä-Satakunnan Puhelin Oy	52	49	46	46	45	44	45
Eurajoen Teleosuuskunta	9	9	8	8	8	8	8
Forssan Seudun Puhelin Oy	72	69	65	66	66	61	63
Helsingin Puhelin Oy	3561	3384	3446	3578	3553	3313	3593
Huittisten Puhelin Oy	20	20	20	21	20	22	21
Hämeen Puhelin Oy	147	128	122	132	133	114	114
Puhelinosuuskunta IPY	36	35	35	36	35	34	36
Ikaalisten-Parkanon Puhelin Oy	36	34	32	32	31	31	32
Jakobstadsnejdens Telefon Ab	93	77	78	86	95	69	72
Joensuun Puhelin Oy	121	118	119	111	117	114	110
Puhelin Oy Telekarelia	27	22	23	24	24	24	22
Kajaanin Puhelinosuuskunta	75	74	71	71	68	59	61
Kankaanpään Puhelin Oy	26	25	22	21	20	20	20
Karjaan Puhelin Oy	30	28	28	28	26	26	27
Keikyän Puhelinosuuskunta	6	6	6	6	5	4	4
Keski-Suomen Puhelin Oy	231	191	180	225	230	241	260
Kemiön Puhelinosakeyhtiö	14	13	13	13	13	11	11
Kokkolan Puhelin Oy	98	100	79	79	79	81	81
Kymen Puhelin Oy	152	155	150	157	158	141	151
Kuopion Puhelin Oy	277	272	267	271	253	217	233
Laitilan Puhelinosuuskunta	18	17	17	16	16	17	17
Lohjan Puhelin Oy	76	69	63	61	60	58	57
Loimaan Seudun Puhelin Oy	78	71	56	55	63	55	60
Loviisan Puhelinosuuskunta	26	23	23	22	21	22	21
Mariehamns Telefon Ab	34	34	33	33	31	29	31
Härkätien Puhelin Oy	13	12	11	10	10	11	11
Mikkelin Puhelinyhdistys	80	71	69	95	88	85	88
Oulun Puhelin Oy	300	291	280	290	301	306	307
Outokummun Puhelin Oy	17	15	13	10	10	10	10
Turun Seudun Puhelin Oy	50	50	42	40	41	41	37
Paraisten Puhelin Oy	13	5	2	3	5	7	4
Pohjanmaan Puhelinosuuskunta	187	177	177	176	172	168	167
Pohjois-Hämeen Puhelin Oy	65	60	57	57	56	56	55
Porin Puhelin Oy	185	184	167	122	125	116	136
Päijät-Hämeen Puhelinyhdistys	467	445	396	414	381	371	375
Lännen Puhelin Oy	304	273	240	240	239	248	254
Riihimäen Puhelin Oy	65	60	55	53	53	53	44
Salon Seudun Puhelin Oy	117	103	100	101	99	102	102
Savonlinnan Puhelinyhdistys	89	85	81	74	77	78	79
Tampereen Puhelin	699	689	681	704	704	789	699
Turun Puhelin	595	557	537	541	516	530	491
Vaasan Läänin Puhelin Oy	466	478	459	448	438	376	365
Vakka-Suomen Puhelin Oy	53	51	55	46	45	40	42
Ålands Telefonandelslag	27	26	22	21	21	21	20
Sonera	6950	6445	6930	7239	7667	7967	8606

Table: Fixed assets of telephone companies, million FIM, 1992-1998 3(7)

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	7.3	8.0	10.5	9.2	9.8	10.7	10.0
Etelä-Satakunnan Puhelin Oy	30.9	32.6	35.1	35.7	34.5	37.7	36.7
Eurajoen Teleosuuskunta	8.4	7.8	7.0	6.5	6.2	5.4	4.3
Forssan Seudun Puhelin Oy	48.7	46.5	49.2	56.4	58.7	61.0	58.5
Helsingin Puhelin Oy	1627.7	1510.4	1934.6	2123.5	2282.7	2579.7	2218.0
Huittisten Puhelin Oy	15.3	15.6	16.3	15.3	17.4	19.4	18.5
Hämeen Puhelin Oy	124.2	119.6	109.6	144.9	128.1	116.6	103.0
Puhelinosuuskunta IPY	27.4	26.2	35.4	24.3	25.6	27.7	29.3
Ikaalisten-Parkanon Puhelin Oy	31.5	30.2	35.5	37.7	39.9	38.9	38.9
Jakobstadsnejdens Telefon Ab	70.0	66.2	59.4	60.7	61.3	52.8	51.5
Joensuun Puhelin Oy	106.2	98.9	91.6	83.9	72.5	63.3	53.9
Puhelin Oy Telekarelia	40.4	37.4	40.2	41.5	41.2	41.1	38.0
Kajaanin Puhelinosuuskunta	48.6	48.3	54.3	60.4	59.5	65.4	66.4
Kankaanpään Puhelin Oy	21.7	22.1	21.6	23.9	28.8	29.7	30.3
Karjaan Puhelin Oy	19.7	22.5	22.1	21.9	23.2	22.3	21.0
Keikyän Puhelinosuuskunta	2.1	1.9	1.6	2.1	2.6	2.4	2.2
Keski-Suomen Puhelin Oy	159.4	156.5	198.2	228.7	225.8	237.7	233.9
Kemiön Puhelinosakeyhtiö	6.3	6.5	7.1	9.2	9.8	9.1	7.2
Kokkolan Puhelin Oy	44.2	43.2	45.9	50.0	49.6	48.9	45.8
Kymen Puhelin Oy	68.5	77.4	124.5	133.4	143.4	150.6	152.1
Kuopion Puhelin Oy	163.6	152.9	194.2	199.8	195.7	194.5	185.4
Laitilan Puhelinosuuskunta	17.7	19.7	15.0	16.8	18.2	19.2	16.5
Lohjan Puhelin Oy	56.9	55.9	57.9	63.7	64.3	64.5	60.5
Loimaan Seudun Puhelin Oy	65.0	65.0	65.1	63.4	65.2	91.9	67.4
Loviisan Puhelinosuuskunta	22.5	22.9	22.8	23.6	24.0	22.8	22.8
Mariehamns Telefon Ab	18.8	18.8	16.8	25.3	24.5	23.4	22.4
Härkätien Puhelin Oy	11.9	15.4	12.1	11.2	11.9	12.9	13.3
Mikkelin Puhelinyhdistys	54.0	56.6	92.0	83.9	87.2	91.9	82.2
Oulun Puhelin Oy	190.3	192.5	290.0	303.6	330.7	341.5	354.5
Outokummun Puhelin Oy	12.0	12.7	9.4	9.7	9.1	8.9	7.4
Turun Seudun Puhelin Oy	39.3	43.2	50.2	52.2	52.8	47.8	46.2
Paraisten Puhelin Oy	n.a.	n.a.	n.a.	22.7	21.8	21.9	20.4
Pohjanmaan Puhelinosuuskunta	98.5	99.8	200.3	201.3	210.1	199.9	204.5
Pohjois-Hämeen Puhelin Oy	37.5	39.8	51.6	52.1	53.3	53.3	52.6
Porin Puhelin Oy	74.9	84.4	89.2	92.6	91.6	98.0	83.8
Päijät-Hämeen Puhelinyhdistys	222.5	219.4	207.1	363.8	357.9	352.4	333.2
Lännen Puhelin Oy	189.3	190.6	200.7	230.8	228.2	248.0	205.5
Riihimäen Puhelin Oy	47.9	44.7	62.3	61.1	65.7	61.9	51.8
Salon Seudun Puhelin Oy	85.2	77.3	71.5	88.6	87.3	109.0	75.6
Savonlinnan Puhelinyhdistys	59.2	60.6	59.9	73.5	73.2	70.9	63.8
Tampereen Puhelin	519.2	519.5	719.3	751.5	780.0	741.6	718.2
Turun Puhelin	175.6	174.8	287.4	298.7	315.8	544.5	321.2
Vaasan Läänin Puhelin Oy	279.6	284.0	432.2	292.5	289.2	293.2	255.5
Vakka-Suomen Puhelin Oy	29.2	29.1	28.0	28.4	31.8	34.3	32.5
Ålands Telefonandelslag	15.2	17.5	17.8	22.1	22.5	21.9	22.3
Sonera	3951.8	3666.4	4151.3	4840.0	5560.7	6481.0	6674.0

Table: Fixed-net accesses of telephone companies, 1000 units, 1992-1998 4(7)

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	3.6	3.6	3.7	3.7	3.7	3.7	3.8
Etelä-Satakunnan Puhelin Oy	11.1	11.1	11.1	10.9	11.0	11.0	11.1
Eurajoen Teleosuuskunta	2.6	2.6	2.6	2.6	2.6	2.6	2.7
Forssan Seudun Puhelin Oy	16.4	16.4	16.6	16.5	16.3	16.2	15.9
Helsingin Puhelin Oy	695.5	705.3	708.5	708.3	714.6	740.2	739.3
Huittisten Puhelin Oy	4.7	4.7	4.7	4.7	4.7	4.7	4.9
Hämeen Puhelin Oy	42.5	42.7	42.8	42.3	42.2	42.5	42.9
Puhelinosuuskunta IPY	8.7	8.8	9.0	8.9	9.0	9.0	9.2
Ikaalisten-Parkanon Puhelin Oy	8.6	8.8	8.9	8.9	8.9	8.9	8.9
Jakobstadsnejdens Telefon Ab	16.1	16.3	16.7	16.5	16.4	16.8	17.0
Joensuun Puhelin Oy	28.7	28.0	28.0	29.2	27.9	28.2	28.0
Puhelin Oy Telekarelia	7.9	8.4	8.9	8.9	9.6	9.8	9.8
Kajaanin Puhelinosuuskunta	15.7	15.9	15.8	15.8	15.9	15.9	15.8
Kankaanpään Puhelin Oy	6.0	6.0	6.1	6.0	6.0	6.0	6.0
Karjaan Puhelin Oy	6.0	6.0	6.1	6.1	6.0	6.1	6.2
Keikyän Puhelinosuuskunta	1.4	1.4	1.5	1.4	1.4	1.4	1.5
Keski-Suomen Puhelin Oy	60.0	61.9	63.1	62.2	63.1	62.1	58.1
Kemiön Puhelinosakeyhtiö	3.5	3.6	3.6	3.6	3.5	3.5	3.4
Kokkolan Puhelin Oy	19.4	19.5	19.5	19.3	18.9	18.7	18.6
Kymen Puhelin Oy	32.6	32.7	32.5	32.6	32.3	33.1	34.3
Kuopion Puhelin Oy	61.6	62.5	63.2	62.9	60.0	63.6	63.1
Laitilan Puhelinosuuskunta	4.3	4.3	4.3	4.3	4.4	4.5	4.7
Lohjan Puhelin Oy	21.8	21.9	22.0	22.1	21.7	22.0	22.1
Loimaan Seudun Puhelin Oy	18.1	18.2	18.4	18.1	18.5	18.7	19.0
Loviisan Puhelinosuuskunta	6.2	5.9	5.9	5.9	5.9	6.0	6.1
Mariehamns Telefon Ab	9.2	9.4	9.5	9.6	9.7	10.0	10.3
Härkätien Puhelin Oy	3.3	3.3	3.3	3.4	3.4	3.4	3.4
Mikkelin Puhelinyhdistys	22.5	22.8	22.4	22.6	22.4	22.8	22.1
Oulun Puhelin Oy	79.6	80.7	81.0	80.8	82.2	83.8	86.0
Outokummun Puhelin Oy	4.3	4.3	4.4	4.4	4.3	4.3	4.2
Turun Seudun Puhelin Oy	13.5	13.6	13.8	13.8	13.7	13.8	14.2
Paraisten Puhelin Oy	6.7	6.5	6.5	6.5	6.7	6.8	6.8
Pohjanmaan Puhelinosuuskunta	47.0	47.6	47.6	47.2	47.0	46.7	47.2
Pohjois-Hämeen Puhelin Oy	14.1	14.2	14.4	14.5	14.6	14.6	14.3
Porin Puhelin Oy	40.1	39.5	39.2	38.9	38.2	38.5	37.9
Päijät-Hämeen Puhelinyhdistys	108.3	107.2	107.3	106.5	107.1	108.1	111.3
Lännen Puhelin Oy	71.7	72.2	72.3	72.5	73.9	75.3	76.1
Riihimäen Puhelin Oy	19.6	19.8	19.8	20.0	19.6	19.8	20.3
Salon Seudun Puhelin Oy	30.5	30.6	30.8	30.7	31.0	30.8	32.1
Savonlinnan Puhelinyhdistys	17.3	17.4	17.4	17.1	16.8	16.7	16.6
Tampereen Puhelin	164.4	165.9	167.6	167.6	167.7	168.7	167.4
Turun Puhelin Oy	118.0	118.4	118.7	117.6	118.2	118.1	117.7
Vaasan Läänin Puhelin Oy	102.0	102.1	103.1	101.4	98.9	97.6	97.3
Vakka-Suomen Puhelin Oy	10.3	10.1	10.2	10.1	9.8	10.1	9.9
Ålands Telefonandelslag	7.0	7.1	7.2	7.2	7.3	7.4	7.4
Sonera	744.9	747.3	766.3	779.5	774.5	789.3	790.7

Table: Price-basket for households of telephone companies, 1992-1998 5(7)

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	1229	1294	1416	1328	1245	1259	1288
Etelä-Satakunnan Puhelin Oy	1467	1475	1547	1517	1419	1383	1383
Eurajoen Teleosuuskunta	1449	1468	1546	1564	1594	1594	1447
Forssan Seudun Puhelin Oy	1405	1438	1429	1430	1375	1394	1406
Helsingin Puhelin Oy	1147	1160	1225	1235	1230	1221	1297
Huittisten Puhelin Oy	1499	1558	1599	1555	1488	1488	1524
Hämeen Puhelin Oy	1308	1356	1422	1422	1336	1351	1351
Puhelinosuuskunta IPY	1120	1120	1182	1182	1182	1171	1171
Ikaalisten-Parkanon Puhelin Oy	1444	1498	1601	1601	1531	1531	1575
Jakobstadsnejdens Telefon Ab	1428	1440	1550	1550	1371	1371	1316
Joensuun Puhelin Oy	1217	1233	1385	1385	1293	1319	1364
Puhelin Oy Telekarelia	1692	1338	1509	1327	1435	1577	1572
Kajaanin Puhelinosuuskunta	1325	1318	1335	1573	1280	1307	1340
Kankaanpään Puhelin Oy	1535	1536	1605	1345	1459	1471	1471
Karjaan Puhelin Oy	1502	1503	1574	1574	1476	1462	1462
Keikyän Puhelinosuuskunta	1138	1284	1372	1446	1383	1383	1383
Keski-Suomen Puhelin Oy	1014	1089	1123	1123	1176	1198	1132
Kemiön Puhelinosakeyhtiö	1404	1449	1548	1587	1497	1569	1569
Kokkolan Puhelin Oy	1250	1220	1288	1281	1219	1292	1312
Kymen Puhelin Oy	1111	1127	1156	1156	1107	1115	1205
Kuopion Puhelin Oy	1007	1071	1139	1135	1148	1155	1364
Laitilan Puhelinosuuskunta	1564	1480	1561	1561	1474	1407	1242
Lohjan Puhelin Oy	1439	1216	1314	1314	1285	1324	1357
Loimaan Seudun Puhelin Oy	961	994	1072	1072	1012	1012	1368
Loviisan Puhelinosuuskunta	1594	1595	1548	1547	1461	1461	1461
Mariehamns Telefon Ab	1170	949	1028	1043	962	932	918
Härkätien Puhelin Oy	1681	1499	1665	1662	1562	1489	1489
Mikkelin Puhelinyhdistys	1170	1308	1416	1416	1320	1355	1355
Oulun Puhelin Oy	820	971	1031	1038	990	1069	1239
Outokummun Puhelin Oy	1424	1464	1570	1289	1210	1210	1210
Turun seudun puhelin	1138	1544	1542	1542	1446	1350	1378
Paraisten Puhelin Oy	1147	1126	1123	1521	1421	1421	1494
Pohjanmaan Puhelinosuuskunta	1133	1133	1289	1262	1209	1230	1230
Pohjois-Hämeen Puhelin Oy	1560	1417	1478	1478	1380	1379	1352
Porin Puhelin Oy	1052	1293	1437	1436	1348	1385	1385
Päijät-Hämeen Puhelinyhdistys	1171	1196	1329	1329	1279	1283	1325
Lännen Puhelin Oy	1499	1468	1099	988	926	948	948
Riihimäen Puhelin Oy	1393	1489	1410	1410	1362	1398	1446
Salon Seudun Puhelin Oy	1431	1473	1566	1517	1428	1428	1428
Savonlinnan Puhelinyhdistys	1446	1428	1444	1444	1352	1352	1352
Tampereen Puhelin	1055	1063	1154	1175	1194	1192	1215
Turun Puhelin	964	983	1094	1094	1031	1031	1251
Vaasan Läänin Puhelin Oy	1378	1426	1449	1413	1348	1410	1410
Vakka-Suomen Puhelin Oy	1136	1517	1621	1621	1517	1332	1332
Ålands Telefonandelslag	1544	1549	1510	1510	1408	1273	1207
Sonera	1350	1351	1428	1448	1453	1508	1684

Table: Mobile phone calls, million minutes in telephone companies, 1992-1998

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	n.a.	n.a.	n.a.	0.6	1.0	1.5	1.8
Etelä-Satakunnan Puhelin Oy	n.a.	n.a.	n.a.	2.7	2.7	2.7	2.7
Eurajoen Teleosuuskunta	n.a.	n.a.	n.a.	0.5	0.7	0.5	1.0
Forssan Seudun Puhelin Oy	n.a.	n.a.	n.a.	3.9	5.1	6.4	6.5
Helsingin Puhelin Oy	n.a.	n.a.	n.a.	131.2	204.2	276.7	318.0
Huittisten Puhelin Oy	n.a.	n.a.	n.a.	1.3	1.4	1.4	1.4
Hämeen Puhelin Oy	n.a.	n.a.	n.a.	7.6	13.7	18.1	24.6
Puhelinosuuskunta IPY	n.a.	n.a.	n.a.	1.9	2.8	3.5	4.2
Ikaalisten-Parkanon Puhelin Oy	n.a.	n.a.	n.a.	1.8	2.5	3.1	3.6
Jakobstadsnejdens Telefon Ab	n.a.	n.a.	n.a.	2.7	4.2	5.4	6.3
Joensuun Puhelin Oy	n.a.	n.a.	n.a.	4.0	9.5	16.7	22.3
Puhelin Oy Telekarelia	n.a.	n.a.	n.a.	1.0	1.6	2.3	2.8
Kajaanin Puhelinosuuskunta	n.a.	n.a.	n.a.	3.0	4.6	5.6	7.0
Kankaanpään Puhelin Oy	n.a.	n.a.	n.a.	1.2	2.0	2.7	3.3
Karjaan Puhelin Oy	n.a.	n.a.	n.a.	1.1	1.7	2.3	2.6
Keikyän Puhelinosuuskunta	n.a.	n.a.	n.a.	0.4	0.4	0.4	0.4
Keski-Suomen Puhelin Oy	n.a.	n.a.	n.a.	12.1	18.0	22.5	26.7
Kemiön Puhelinosakeyhtiö	n.a.	n.a.	n.a.	0.5	0.7	0.9	1.1
Kokkolan Puhelin Oy	n.a.	n.a.	n.a.	4.2	6.4	8.3	9.7
Kymen Puhelin Oy	n.a.	n.a.	n.a.	4.5	7.9	11.0	13.8
Kuopion Puhelin Oy	n.a.	n.a.	n.a.	12.1	19.3	26.8	30.7
Laitilan Puhelinosuuskunta	n.a.	n.a.	n.a.	1.0	1.4	1.7	1.9
Lohjan Puhelin Oy	n.a.	n.a.	n.a.	4.1	6.3	8.3	9.8
Loimaan Seudun Puhelin Oy	n.a.	n.a.	n.a.	3.4	5.1	5.7	7.6
Loviisan Puhelinosuuskunta	n.a.	n.a.	n.a.	0.9	1.4	1.3	2.2
Mariehamns Telefon Ab	n.a.	n.a.	n.a.	1.3	2.0	2.3	3.2
Härkätien puhelin	n.a.	n.a.	n.a.	0.6	0.9	1.2	1.5
Mikkelin Puhelinyhdistys	n.a.	n.a.	n.a.	4.0	6.1	7.8	9.4
Oulun Puhelin Oy	n.a.	n.a.	n.a.	12.9	23.3	22.8	42.2
Outokummun Puhelin Oy	n.a.	n.a.	n.a.	0.6	1.0	1.4	1.7
Turun Seudun Puhelin Oy	n.a.	n.a.	n.a.	2.6	4.0	5.2	6.1
Paraisten Puhelin Oy	n.a.	n.a.	n.a.	1.1	1.6	1.8	2.2
Pohjanmaan Puhelinosuuskunta	n.a.	n.a.	n.a.	9.1	15.0	20.0	24.6
Pohjois-Hämeen Puhelin Oy	n.a.	n.a.	n.a.	2.9	3.9	4.8	5.2
Porin Puhelin Oy	n.a.	n.a.	n.a.	8.1	11.5	14.5	16.2
Päijät-Hämeen Puhelin	n.a.	n.a.	n.a.	16.8	26.8	30.1	42.7
Lännen Puhelin Oy	n.a.	n.a.	n.a.	16.2	23.2	28.7	33.2
Riihimäen Puhelin Oy	n.a.	n.a.	n.a.	3.7	5.4	6.5	7.8
Salon Seudun Puhelin Oy	n.a.	n.a.	n.a.	7.5	10.0	11.8	13.4
Savonlinnan Puhelinyhdistys	n.a.	n.a.	n.a.	2.7	4.3	5.9	7.0
Tampereen Puhelin	n.a.	n.a.	n.a.	33.7	49.8	65.6	73.6
Turun Puhelin	n.a.	n.a.	n.a.	21.5	30.2	37.3	42.4
Vaasan Läänin Puhelin Oy	n.a.	n.a.	n.a.	24.9	33.3	42.6	44.7
Vakka-Suomen Puhelin Oy	n.a.	n.a.	n.a.	2.1	3.1	4.0	4.5
Ålands Telefonandelslag	n.a.	n.a.	n.a.	0.8	1.3	1.7	2.1
Sonera	n.a.	n.a.	600.0	804.0	1222.0	1728.2	2440.3

Table: Profitability of telephone companies, million FIM 1992-1998 7(7)

	1992	1993	1994	1995	1996	1997	1998
Alajärven Puhelinosuuskunta	0.2	-0.3	0.4	0.4	0.7	0.9	1.4
Etelä-Satakunnan Puhelin Oy	2.0	0.4	0.6	0.9	3.4	3.5	2.6
Eurajoen Teleosuuskunta	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Forssan Seudun Puhelin Oy	0.0	0.8	1.7	1.7	1.9	1.5	2.3
Helsingin Puhelin Oy	-31.3	-45.8	37.9	38.5	63.0	188.0	253.0
Huittisten Puhelin Oy	0.0	0.5	1.1	0.9	0.9	0.7	0.3
Hämeen Puhelin Oy	5.6	0.5	4.2	7.6	6.2	9.2	11.2
Puhelinosuuskunta IPY	1.0	2.0	2.6	3.5	2.6	2.5	4.5
Ikaalisten-Parkanon Puhelin Oy	0.0	0.1	2.1	2.4	1.7	2.0	2.3
Jakobstadsnejdens Telefon Ab	-0.9	0.0	0.7	2.1	2.0	5.4	5.7
Joensuun Puhelin Oy	3.0	9.2	3.5	1.8	2.0	9.0	13.9
Puhelin Oy Telekarelia	0.2	0.1	0.1	0.8	2.1	1.5	3.9
Kajaanin Puhelinosuuskunta	1.9	1.1	0.9	2.2	1.8	2.0	4.9
Kankaanpään Puhelin Oy	0.0	0.2	1.1	0.6	0.6	0.3	1.0
Karjaan Puhelin Oy	0.0	-0.5	0.1	3.0	0.9	2.3	2.2
Keikyän Puhelinosuuskunta	0.1	0.0	0.1	0.0	0.3	-0.1	-0.2
Keski-Suomen Puhelin Oy	3.0	0.5	4.7	5.0	14.7	18.7	27.7
Kemiön Puhelinosakeyhtiö	0.0	-0.3	0.0	0.1	0.0	0.2	0.0
Kokkolan Puhelin Oy	2.9	0.0	5.0	4.4	2.3	4.3	14.2
Kymen Puhelin Oy	0.7	-0.2	2.0	3.5	3.7	10.6	19.0
Kuopion Puhelin Oyj	3.1	0.6	6.6	3.9	14.1	19.9	28.4
Laitilan Puhelinosuuskunta	0.0	-0.5	0.1	1.5	1.5	2.0	1.6
Lohjan Puhelin Oy	1.8	-0.2	0.1	1.8	2.4	4.9	7.2
Loimaan Seudun Puhelin Oy	0.1	4.6	8.1	7.6	8.1	12.3	12.7
Loviisan Puhelinosuuskunta	0.0	-0.9	0.9	0.6	1.0	1.9	3.3
Mariehamns Telefon Ab	1.2	1.0	0.9	3.3	4.0	5.2	8.1
Härkätien puhelin	0.1	0.0	0.7	1.0	0.5	2.2	2.5
Mikkelin Puhelinyhdistys	0.5	2.9	3.3	1.7	3.0	9.5	6.7
Oulun Puhelin Oy	-2.4	15.8	12.1	8.2	12.6	16.0	13.0
Outokummun Puhelin Oy	0.1	-0.3	0.0	0.4	0.9	1.1	1.4
Turun Seudun puhelin Oy	0.0	1.3	2.4	3.0	3.5	2.9	2.5
Paraisten Puhelin Oy	0.1	0.0	0.5	0.3	0.5	0.1	0.3
Pohjanmaan Puhelinosuuskunta	0.5	3.2	1.1	8.8	6.3	10.3	11.0
Pohjois-Hämeen Puhelin Oy	0.0	2.1	4.2	0.6	2.0	4.1	6.3
Porin Puhelin Oy	0.8	5.0	5.1	9.5	8.1	6.1	8.8
Päijät-Hämeen Puhelinyhdistys	6.0	-2.1	8.4	1.0	-4.4	15.6	31.6
Lännen Puhelin Oy	1.4	7.6	14.1	9.5	10.1	16.0	19.8
Riihimäen Puhelin Oy	0.1	3.6	3.0	0.9	1.2	4.7	5.6
Salon Seudun Puhelin Oy	5.1	1.4	2.9	3.4	2.1	2.1	6.2
Savonlinnan Puhelinyhdistys	0.0	-2.2	-0.3	2.5	4.4	3.0	3.6
Tampereen Puhelin	1.5	9.1	22.5	21.3	38.9	72.2	98.5
Turun Puhelin	28.3	30.4	26.6	14.8	19.2	10.7	31.3
Vaasan Läänin Puhelin Oy	8.0	4.6	12.2	13.8	5.0	16.1	37.9
Vakka-Suomen Puhelin Oy	0.0	0.3	0.1	3.2	2.0	4.1	2.3
Ålands Telefonandelslag	0.1	0.1	0.1	0.9	2.0	1.6	2.5
Sonera	308.6	729.0	357.9	531.2	500.0	1836.0	2061.0

**APPENDIX 9: Examples of the key results of the principal component analyses**Table: The explaining principal components (X) in the National Group, 1992-1998<sup>452</sup>

National Group	XCOMP1	XCOMP2	XCOMP3	XCOMP4	XCOMP5	XCOMP6
variance	16.115	3.782	1.55	0.852	0.429	0.271
explanation, %	70.07	16.44	6.74	3.71	1.87	1.18
cumulative explanation, %	70.07	86.51	93.25	96.95	98.82	100.00
Loading			XCOMP1	XCOMP2		
Number of companies	(YLKM)		0.0852	0.8894		
Cumulative taxes	(VERO)		0.9812	-0.1451		
Payments to other operators	(MMO)		0.9134	0.3134		
Personnel size	(HEN)		0.9834	0.0884		
Personnel with institute education	(HOK)		0.9414	-0.1866		
Personnel with academic education	(HKK)		0.9699	-0.0267		
Current assets	(VOM)		0.7059	0.6029		
Fixed assets	(KOM)		0.9902	0.0121		
Financial assets	(ROM)		0.5818	0.5005		
Short term debts	(LYVE)		0.9516	-0.0564		
Long term debts	(PIVE)		0.6717	-0.5128		
Solvency	(VAKA)		-0.2613	0.8186		
Fixed-net accesses	(KVL)		0.9210	-0.2887		
Fixed-net company accesses	(YLIM)		0.8287	-0.4507		
Net capital costs	(POK)		0.5246	-0.5818		
Investments	(INV)		0.8000	-0.5330		
Personnel costs	(HENKUST)		0.9758	-0.0434		
Price-basket, households	(HKKT)		0.9261	0.1374		
Price-basket companies	(HKYR)		-0.8578	-0.3544		
Advertising	(MM)		0.8941	0.2468		
Local-net revenues	(PVLV)		0.8074	0.1811		
Phone call revenues	(PLT)		0.9271	0.3510		
Fixed-net revenues	(KLVT)		0.9829	0.0689		

<sup>452</sup> The abbreviations will be used later in the tables where the correlation results in the principal component variables are presented.



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Table: The explaining principal components (X) in the Helsinki Group, 1992-1998

Helsinki Group	XCOMP1	XCOMP2	XCOMP3	XCOMP4	XCOMP5	XCOMP6
variance	16.482	3.41	2.1	0.588	0.291	0.129
explanation, %	71.66	14.83	9.13	2.56	1.27	0.56
cumulative explanation, %	71.66	86.49	95.62	98.17	99.44	100.00
Loading			XCOMP1	XCOMP2		
Number of companies (YLKM)			0.9126	0.3172		
Cumulative taxes (VERO)			0.9405	-0.3161		
Payments to other operators (MMO)			0.4736	0.8492		
Personnel size (HEN)			0.0737	-0.0142		
Personnel with institute education(HOK)			0.9172	-0.1752		
Personnel with academic education (HKK)			0.9661	-0.2027		
Current assets (VOM)			0.8858	-0.2725		
Fixed assets (KOM)			0.7284	-0.5442		
Financial assets (ROM)			0.9410	0.0926		
Short term debts (LYVE)			0.8384	-0.4597		
Long term debts (PIVE)			-0.2261	-0.7358		
Solvency (VAKA)			0.9268	0.2116		
Fixed-net accesses (KVL)			0.9459	-0.1042		
Fixed-net company accesses (YLIM)			0.9809	-0.1803		
Net capital costs (POK)			-0.8945	-0.2921		
Investments (INV)			0.9374	0.1618		
Personnel costs (HENKUST)			0.9338	-0.3226		
Price-basket, households (HKKT)			0.8177	-0.4230		
Price-basket companies (HKYR)			-0.7811	-0.4721		
Advertising (MM)			0.9525	-0.0237		
Local-net revenues (PVLV)			0.9700	-0.1434		
Phone call revenues (PLT)			0.9140	0.3909		
Fixed-net revenues (KLVT)			0.7584	0.6358		

Table: The explaining principal components (X) in the Regional Group, 1992-1998

Regional Group	XCOMP1	XCOMP2	XCOMP3	XCOMP4	XCOMP5	XCOMP6
Variance	15.214	2.096	1.921	1.49	1.044	0.863
Explanation, %	60.86	8.38	7.69	5.96	4.18	3.45
Cumulative explanation, %	60.86	69.24	76.93	82.89	87.07	90.53
Loading			XCOMP1	XCOMP2		
Number of companies (YLKM)			0.9065	0.1277		
Cumulative taxes (VERO)			0.9475	0.0176		
Payments to other operators (MMO)			0.951	0.0176		
Personnel size (HEN)			0.9163	-0.0803		
Personnel with institute education (HOK)			0.9273	0.3052		
Personnel with academic education (HKK)			0.8536	0.0776		
Current assets (VOM)			0.8167	0.0758		
Fixed assets (KOM)			0.9203	0.0357		
Financial assets (ROM)			0.9119	0.2226		
Short term debts (LYVE)			0.9032	-0.0461		
Long term debts (PIVE)			0.5338	-0.6488		
Solvency (VAKA)			-0.1916	0.7593		
Fixed-net accesses (KVL)			0.9437	-0.0073		
Fixed-net company accesses (YLIM)			0.9264	-0.0481		
Company outlets (TOIP)			-0.0696	0.5066		
Net capital costs (POK)			0.0694	-0.6161		
Investments (INV)			0.8457	-0.1709		
Personnel costs (HENKUST)			0.9723	-0.0516		
Price-basket, households (HKKT)			0.114	0.0582		
Price-basket companies (HKYR)			-0.1696	-0.1512		
Advertising (MM)			0.7071	-0.0865		
Local-net revenues (PVLV)			0.9631	0.0338		
Phone call revenues (PLT)			0.9809	0.0073		
Fixed-net revenues (KLVT)			0.8934	0.1929		
Mergers (FUUS)			-0.1701	0.4158		

Table: The explaining principal components (X) in the Local Group, 1992-1998

Local Group	XCOMP1	XCOMP2	XCOMP3	XCOMP4	XCOMP5	XCOMP6
Variance	14.7	2.63	1.316	1.066	0.961	0.681
Explanation, %	58.80	10.52	5.26	4.27	3.85	2.73
Cumulative explanation, %	58.80	69.32	74.58	78.85	82.69	85.42
Loading			XCOMP1	XCOMP2		
Number of companies (YLKM)			0.7566	0.1502		
Cumulative taxes (VERO)			0.8565	0.2084		
Payments to other operators (MMO)			0.9449	0.0453		
Personnel size (HEN)			0.9406	-0.1663		
Personnel with institute education (HOK)			0.8064	0.18		
Personnel with academic education (HKK)			0.7806	0.1525		
Current assets (VOM)			0.6952	-0.1184		
Fixed assets (KOM)			0.9263	0.0155		
Financial assets (ROM)			0.8609	0.3047		
Short term debts (LYVE)			0.9015	-0.2586		
Long term debts (PIVE)			0.6469	-0.656		
Solvency (VAKA)			-0.086	0.8131		
Fixed-net accesses (KVL)			0.9772	0.0025		
Fixed-net company accesses (YLIM)			0.9515	-0.0501		
Company outlets (TOIP)			0.7647	0.0125		
Net capital costs (POK)			0.1717	-0.8761		
Investments (INV)			0.9014	0.0615		
Personnel costs (HENKUST)			0.9652	-0.06555		
Price-basket, households (HKKT)			-0.2852	-0.0216		
Price-basket companies (HKYR)			-0.2193	-0.4297		
Advertising (MM)			0.5827	-0.1529		
Local-net revenues (PVLV)			0.9763	-0.0091		
Phone call revenues (PLT)			0.9832	-0.0281		
Fixed-net revenues (KLVT)			0.607	0.4369		
Mergers (FUUS)			0.2397	0.1845		

Table: The correlation of the explanatory variables (X) in the strategic groups, 1992-1998,

National Group	YLK	VERO	MM	HEN	HOK	HKK	VOM	KOM	ROM	LYVE	PIVE	VAK	KVL	YLI	POK	INV	HEN	HKK	HKY	MM	PVL	PLT	KLV
M	O																						T
YLKM	1.00	-0.09	0.29	0.17	-0.12	0.06	0.64	0.09	0.66	0.05	-0.18	0.54	-0.25	-0.41	-0.32	-0.47	0.10	0.13	-0.41	0.18	0.34	0.35	0.09
VERO	-0.09	1.00	0.86	0.95	0.98	0.97	0.61	0.98	0.45	0.92	0.70	-0.33	0.95	0.90	0.55	0.89	0.95	0.89	-0.77	0.85	0.75	0.87	0.97
MMO	0.29	0.86	1.00	0.93	0.77	0.85	0.81	0.88	0.65	0.84	0.39	0.09	0.78	0.63	0.34	0.56	0.86	0.98	-0.85	0.99	0.68	0.98	0.95
HEN	0.17	0.95	0.93	1.00	0.90	0.94	0.80	0.97	0.69	0.94	0.65	-0.23	0.86	0.73	0.51	0.72	0.98	0.93	-0.83	0.88	0.75	0.93	0.96
HOK	-0.12	0.98	0.77	0.90	1.00	0.98	0.57	0.96	0.36	0.86	0.71	-0.34	0.90	0.91	0.46	0.92	0.90	0.79	-0.74	0.76	0.80	0.82	0.92
HKK	0.06	0.97	0.85	0.94	0.98	1.00	0.69	0.98	0.46	0.87	0.68	-0.22	0.87	0.86	0.43	0.85	0.92	0.85	-0.82	0.83	0.85	0.90	0.97
VOM	0.64	0.61	0.81	0.80	0.57	0.69	1.00	0.70	0.83	0.60	0.29	0.25	0.40	0.24	0.09	0.24	0.71	0.73	-0.71	0.71	0.60	0.85	0.73
KOM	0.09	0.98	0.88	0.97	0.96	0.98	0.70	1.00	0.55	0.95	0.63	-0.25	0.91	0.83	0.44	0.81	0.96	0.88	-0.88	0.87	0.86	0.92	0.97
ROM	0.66	0.45	0.65	0.69	0.36	0.46	0.83	0.55	1.00	0.64	0.34	-0.04	0.34	0.05	0.29	0.06	0.68	0.61	-0.61	0.53	0.45	0.64	0.52
LYVE	0.05	0.92	0.84	0.94	0.86	0.87	0.60	0.95	0.64	1.00	0.65	-0.40	0.93	0.77	0.57	0.74	0.97	0.86	-0.85	0.82	0.76	0.84	0.89
PIVE	-0.18	0.70	0.39	0.65	0.71	0.68	0.29	0.63	0.34	0.65	1.00	-0.77	0.65	0.67	0.86	0.74	0.75	0.50	-0.34	0.34	0.49	0.40	0.58
VAKA	0.54	-0.33	0.09	-0.23	-0.34	-0.22	0.25	-0.25	-0.04	-0.40	-0.77	1.00	-0.44	-0.44	-0.78	-0.54	-0.39	-0.07	-0.05	0.10	-0.09	0.11	-0.12
KVL	-0.25	0.95	0.78	0.86	0.90	0.87	0.40	0.91	0.34	0.93	0.65	-0.44	1.00	0.93	0.61	0.89	0.89	0.85	-0.73	0.82	0.67	0.77	0.90
YLIM	-0.41	0.90	0.63	0.73	0.91	0.86	0.24	0.83	0.05	0.77	0.67	-0.44	0.93	1.00	0.54	0.97	0.76	0.70	-0.60	0.68	0.66	0.64	0.82
POK	-0.32	0.55	0.34	0.51	0.46	0.43	0.09	0.44	0.29	0.57	0.86	-0.78	0.61	0.54	1.00	0.58	0.62	0.51	-0.15	0.33	0.15	0.25	0.45
INV	-0.47	0.89	0.56	0.72	0.92	0.85	0.24	0.81	0.06	0.74	0.74	-0.54	0.89	0.97	0.58	1.00	0.76	0.64	-0.51	0.59	0.60	0.58	0.78
HEN	0.10	0.95	0.86	0.98	0.90	0.92	0.71	0.96	0.68	0.97	0.75	-0.39	0.89	0.76	0.62	0.76	1.00	0.89	-0.80	0.81	0.76	0.86	0.93
KUS																							
HKKT	0.13	0.89	0.98	0.93	0.79	0.85	0.73	0.88	0.61	0.86	0.50	-0.07	0.85	0.70	0.51	0.64	0.89	1.00	-0.77	0.97	0.60	0.93	0.95
HKYR	-0.41	-0.77	-0.85	-0.83	-0.74	-0.82	-0.71	-0.88	-0.61	-0.85	-0.34	-0.05	-0.73	-0.60	-0.15	-0.51	-0.80	-0.77	1.00	-0.84	-0.92	-0.91	-0.85
MM	0.18	0.85	0.99	0.88	0.76	0.83	0.71	0.87	0.53	0.82	0.34	0.10	0.82	0.68	0.33	0.59	0.81	0.97	-0.84	1.00	0.65	0.95	0.94
PVLV	0.34	0.75	0.68	0.75	0.80	0.85	0.60	0.86	0.45	0.76	0.49	-0.09	0.67	0.66	0.15	0.60	0.76	0.60	-0.92	0.65	1.00	0.79	0.77
PLT	0.35	0.87	0.98	0.93	0.82	0.90	0.85	0.92	0.64	0.84	0.40	0.11	0.77	0.64	0.25	0.58	0.86	0.93	-0.91	0.95	0.79	1.00	0.96
KLVT	0.09	0.97	0.95	0.96	0.92	0.97	0.73	0.97	0.52	0.89	0.58	-0.12	0.90	0.82	0.45	0.78	0.93	0.95	-0.85	0.94	0.77	0.96	1.00

<sup>453</sup> See the meanings of the abbreviations on page 283.

The correlation of the explaining variables (X) in the strategic groups, 1992-1998,

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Helsinki Group	YLK M	VERO O	HEN	HOK	HKK	VOM	KOM	ROM	LYVE	PIVE	VAK A	KVL	YLI M	POK	INV	HEN KUS T	HKK R	HKY R	MM	PVL V	PLT T	KLV T
YLK M	1.00	0.76	0.73	-0.04	0.74	0.83	0.72	0.54	0.88	0.60	-0.35	0.89	0.86	0.83	0.86	0.77	0.56	-0.91	0.83	0.87	0.95	0.91
VERO	0.76	1.00	0.19	0.14	0.91	0.99	0.92	0.87	0.83	0.96	-0.01	0.78	0.91	0.98	-0.76	0.83	0.89	-0.59	0.88	0.97	0.74	0.50
MMO	0.73	0.19	1.00	-0.10	0.21	0.30	0.21	-0.07	0.54	0.01	-0.63	0.60	0.40	0.32	-0.63	0.52	0.19	-0.05	0.42	0.35	0.77	0.92
HEN	-0.04	0.14	-0.10	1.00	0.31	0.15	0.12	-0.09	-0.21	0.25	-0.61	-0.02	-0.23	0.09	-0.30	0.34	-0.05	0.32	0.25	-0.11	0.13	0.06
HOK	0.74	0.91	0.21	0.31	1.00	0.91	0.88	0.65	0.80	0.84	-0.24	0.85	0.80	0.93	-0.83	0.93	0.86	0.96	-0.50	0.86	0.93	0.77
HKK	0.83	0.99	0.30	0.15	1.00	1.00	0.89	0.85	0.86	0.94	-0.11	0.81	0.92	0.98	-0.84	0.87	0.97	0.85	-0.67	0.89	0.97	0.80
VOM	0.72	0.92	0.21	0.12	0.88	0.89	1.00	0.68	0.77	0.83	0.02	0.83	0.85	0.94	-0.65	0.80	0.87	-0.48	0.82	0.94	0.74	0.50
KOM	0.54	0.87	-0.07	-0.09	0.65	0.85	0.68	1.00	0.67	0.91	0.31	0.46	0.80	0.80	-0.51	0.91	0.70	-0.46	0.71	0.76	0.42	0.23
ROM	0.88	0.83	0.54	-0.21	0.80	0.86	0.77	0.67	1.00	0.70	-0.14	0.93	0.96	0.90	-0.79	0.84	0.69	-0.86	0.99	0.85	0.89	0.81
LYVE	0.60	0.96	0.01	0.25	0.84	0.94	0.83	0.91	0.70	1.00	0.03	0.60	0.79	0.91	-0.67	0.74	0.93	-0.44	0.77	0.87	0.58	0.32
PIVE	-0.35	-0.01	-0.63	-0.61	-0.24	-0.11	0.02	0.31	-0.14	0.03	1.00	-0.31	0.05	-0.09	0.58	-0.51	0.10	-0.05	0.35	-0.13	-0.12	-0.48
VAKA	0.89	0.78	0.60	-0.02	0.85	0.81	0.83	0.46	0.93	0.60	-0.31	1.00	0.88	0.88	-0.83	0.91	0.78	0.72	-0.77	0.93	0.86	0.95
KVL	0.86	0.91	0.40	-0.23	0.80	0.92	0.85	0.80	0.96	0.79	0.05	0.88	1.00	0.94	-0.74	0.78	0.96	-0.79	0.95	0.92	0.82	0.69
YLIM	0.83	0.98	0.32	0.09	0.93	0.98	0.94	0.80	0.90	0.91	-0.09	0.88	0.94	1.00	-0.81	0.89	0.97	0.88	-0.67	0.94	0.98	0.83
POK	-0.91	-0.76	-0.63	-0.30	-0.83	-0.84	-0.65	-0.51	-0.79	-0.67	0.58	-0.83	-0.74	-0.81	1.00	-0.95	-0.72	-0.66	0.80	-0.79	-0.84	-0.91
INV	0.86	0.83	0.52	0.34	0.93	0.87	0.80	0.51	0.84	0.74	-0.51	0.91	0.78	0.89	-0.95	1.00	0.78	0.81	-0.70	0.86	0.89	0.92
HEN KUS	0.77	0.98	0.19	-0.05	0.86	0.97	0.89	0.91	0.88	0.93	0.10	0.78	0.96	0.97	-0.72	0.78	1.00	0.84	-0.64	0.91	0.94	0.72
HKK T	0.56	0.89	-0.05	0.32	0.96	0.85	0.87	0.70	0.69	0.87	-0.05	0.72	0.73	0.88	-0.66	0.81	0.84	1.00	-0.29	0.79	0.86	0.59
HKY R	-0.91	-0.59	-0.83	0.25	-0.50	-0.67	-0.48	-0.46	-0.86	-0.44	0.35	-0.77	-0.79	-0.67	0.80	-0.70	-0.64	-0.29	1.00	-0.77	-0.66	-0.88
MM	0.83	0.88	0.42	-0.11	0.86	0.89	0.82	0.71	0.99	0.77	-0.13	0.93	0.95	0.94	-0.79	0.86	0.91	0.79	-0.77	1.00	0.88	0.86
PVL V	0.87	0.97	0.35	0.13	0.93	0.97	0.94	0.76	0.85	0.87	-0.12	0.86	0.92	0.98	-0.84	0.89	0.94	0.86	-0.66	0.88	1.00	0.84
PLT T	0.95	0.74	0.77	0.06	0.77	0.80	0.74	0.42	0.89	0.58	-0.48	0.95	0.82	0.83	-0.91	0.92	0.72	0.59	-0.88	0.86	0.84	1.00
KLV T	0.91	0.50	0.92	-0.09	0.55	0.59	0.50	0.23	0.81	0.32	-0.55	0.85	0.69	0.63	-0.83	0.77	0.52	0.31	-0.93	0.73	0.64	0.94

The correlation of the explaining variables (X) in the strategic groups, 1992-1998,

7(8)

Regional Group	YLK	VERO	MM	HEN	HOK	HKK	VOM	KOM	ROM	LYVE	PIVE	VAK	KVL	YLI	TOIP	POK	INV	HEN	HKK	HKY	MM	PVL	PLT	KLVT	FUU
YMKM	1.00	0.89	0.85	0.91	0.89	0.73	0.71	0.80	0.81	0.82	0.37	-0.10	0.94	0.76	-0.01	-0.02	0.71	0.90	0.25	0.01	0.52	0.88	0.90	0.82	-0.08
VERO	0.89	1.00	0.89	0.85	0.87	0.76	0.83	0.86	0.83	0.86	0.47	-0.17	0.91	0.86	-0.03	0.10	0.77	0.92	0.14	-0.18	0.67	0.91	0.92	0.88	-0.07
MMO	0.85	0.89	1.00	0.89	0.87	0.81	0.78	0.81	0.88	0.81	0.46	-0.16	0.90	0.93	-0.08	0.05	0.79	0.93	-0.01	-0.21	0.69	0.89	0.97	0.83	-0.17
HEN	0.91	0.85	0.89	1.00	0.83	0.76	0.71	0.80	0.77	0.76	0.44	-0.12	0.97	0.82	-0.15	0.24	0.73	0.96	0.05	0.10	0.56	0.92	0.94	0.76	-0.22
HOK	0.89	0.87	0.87	0.83	1.00	0.84	0.70	0.90	0.92	0.85	0.35	0.01	0.88	0.82	0.16	-0.15	0.74	0.89	0.11	-0.16	0.62	0.90	0.90	0.86	0.01
HKK	0.73	0.76	0.81	0.76	0.84	1.00	0.58	0.79	0.88	0.76	0.39	-0.13	0.77	0.86	-0.08	-0.11	0.60	0.83	0.07	-0.15	0.59	0.81	0.83	0.73	-0.28
VOM	0.71	0.83	0.78	0.71	0.70	0.58	1.00	0.69	0.70	0.65	0.34	-0.01	0.74	0.78	-0.01	0.21	0.72	0.78	0.14	-0.19	0.65	0.80	0.80	0.81	-0.03
KOM	0.80	0.86	0.81	0.80	0.90	0.79	0.69	1.00	0.86	0.87	0.54	-0.17	0.85	0.82	0.04	0.04	0.83	0.88	0.08	-0.17	0.60	0.90	0.88	0.83	-0.13
ROM	0.81	0.83	0.88	0.77	0.92	0.88	0.70	0.86	1.00	0.86	0.41	-0.07	0.82	0.89	0.04	-0.23	0.69	0.84	0.09	-0.28	0.61	0.85	0.87	0.84	-0.15
LYVE	0.82	0.86	0.81	0.76	0.85	0.76	0.65	0.87	0.86	1.00	0.64	-0.37	0.81	0.79	-0.04	-0.11	0.79	0.84	0.22	-0.28	0.60	0.83	0.84	0.82	-0.13
PIVE	0.37	0.47	0.46	0.44	0.35	0.39	0.34	0.54	0.41	0.64	1.00	-0.83	0.45	0.48	-0.06	0.31	0.65	0.50	-0.05	-0.23	0.47	0.40	0.45	0.32	-0.12
VAKA	-0.10	-0.17	-0.16	-0.12	0.01	-0.13	-0.01	-0.17	-0.07	-0.37	-0.83	1.00	-0.13	-0.21	0.13	-0.23	-0.30	-0.18	-0.01	0.09	-0.18	-0.06	-0.12	0.02	0.09
KVL	0.94	0.91	0.90	0.97	0.88	0.77	0.74	0.85	0.82	0.81	0.45	-0.13	1.00	0.85	-0.05	0.16	0.75	0.97	0.04	0.01	0.60	0.93	0.95	0.78	-0.14
YLIM	0.76	0.86	0.93	0.82	0.82	0.86	0.78	0.82	0.89	0.79	0.48	-0.21	0.85	1.00	-0.16	0.07	0.72	0.90	-0.03	-0.20	0.69	0.87	0.92	0.80	-0.23
TOIP	-0.01	-0.03	-0.08	-0.15	0.16	-0.08	-0.01	0.04	0.04	-0.04	-0.06	0.13	-0.05	-0.16	1.00	-0.14	-0.06	-0.09	-0.10	-0.16	0.01	-0.15	-0.12	-0.12	0.62
POK	-0.02	0.10	0.05	0.24	-0.15	-0.11	0.21	0.04	-0.23	-0.11	0.31	-0.23	0.16	0.07	-0.14	1.00	0.18	0.18	-0.20	0.22	0.15	0.13	0.11	-0.07	-0.05
INV	0.71	0.77	0.79	0.73	0.74	0.60	0.72	0.83	0.69	0.79	0.65	-0.30	0.75	0.72	-0.06	0.18	1.00	0.78	0.05	-0.28	0.64	0.80	0.81	0.75	-0.10
HEN KUS	0.90	0.92	0.93	0.96	0.89	0.83	0.78	0.88	0.84	0.84	0.50	-0.18	0.97	0.90	-0.09	0.18	0.78	1.00	0.10	-0.03	0.66	0.96	0.97	0.83	-0.18
HKKT	0.25	0.14	-0.01	0.05	0.11	0.07	0.14	0.08	0.09	0.22	-0.05	-0.01	0.04	-0.03	-0.10	-0.20	0.05	0.10	1.00	0.10	-0.03	0.14	0.07	0.24	-0.36
HKYR	0.01	-0.18	-0.21	0.10	-0.16	-0.15	-0.19	-0.17	-0.28	-0.28	-0.23	0.09	0.01	-0.20	-0.16	0.22	-0.28	-0.03	0.10	1.00	-0.22	-0.06	-0.11	-0.23	-0.14
MM	0.52	0.67	0.69	0.56	0.62	0.59	0.65	0.60	0.61	0.60	0.47	-0.18	0.60	0.69	0.01	0.15	0.64	0.66	-0.03	-0.22	1.00	0.65	0.69	0.55	-0.07
PVLV	0.88	0.91	0.89	0.92	0.90	0.81	0.80	0.90	0.85	0.83	0.40	-0.06	0.93	0.87	-0.15	0.13	0.80	0.96	0.14	-0.06	0.65	1.00	0.97	0.91	-0.19
PLT	0.90	0.92	0.97	0.94	0.90	0.83	0.80	0.88	0.87	0.84	0.45	-0.12	0.95	0.92	0.11	0.11	0.81	0.97	0.07	-0.11	0.69	0.97	1.00	0.87	-0.20
KLVT	0.82	0.88	0.83	0.76	0.86	0.73	0.81	0.83	0.84	0.82	0.32	0.02	0.78	0.80	-0.12	-0.07	0.75	0.83	0.24	-0.23	0.55	0.91	0.87	1.00	-0.11
FUU SIO	-0.08	-0.07	-0.17	-0.22	0.01	-0.28	-0.03	-0.13	-0.15	-0.13	-0.12	0.09	-0.14	-0.23	0.62	-0.05	-0.10	-0.18	-0.36	-0.14	-0.07	-0.19	-0.20	-0.11	1.00



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